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THE SURGEON AND THE RESEARCH LABORATORY *

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OMAHA

The advance of modern medicine and surgery is due to the casting off of the garments of preconceived hypotheses of bygone ages; a contempt for philosophic dogmas and a disregard for systems of practice not founded on the observations and elucidation of natural phenomena that are governed by definite and fixed laws. These laws have been revealed to us by scientific research, so that speculation by induction had to give way to a science based on objective observation. As our science broadened and became well founded, the art of surgery became highly developed, so much so that its operative possibilities appeared almost limitless. We must agree with David Starr Jordan when he says: "All art is based on science. Science is human experience tested and set in order. Art is knowledge in action. An art which is not based on knowledge becomes a mystery or trade. Sound medicine must rest on science."

While we have progressed in a marvelous degree during the last half-century, we cannot but feel that we still have much to do. We must confess that in many ways we have only begun. There remain so many questions on which we have no light, we therefore come together often to compare our views.

One of the purposes of this Section is to record our work, to exchange ideas and to study the collective experiences of this body. We interrupt our daily work in order that we may come together and review our labors, to thrash out problems, to retain the useful and to discard the impractical. We aim to strengthen the underlying surgical principles and to make our practical achievements more efficient.

When we consider the work of the various sections of this Association, we find that their work falls into two large and distinct groups. We find that to the first group belong the purely scientific and fundamental studies, namely, anatomy, physiology, chemistry, pathology and its coordinate divisions of histology and bacteriology. These are purely research and experimental and yet fundamental. To the second group belong the sections of the practice of medicine and surgery and its many subdivisions. I may say the divisions of applied science—the application of scientific principles to the practice and art of medicine and surgery. To the first division belong the men who devote themselves entirely to the unraveling of basic problems and the teaching of principles.

While modern medicine and surgery has its body of research men, whose labors have been entirely of a research and philosophic character, men whose labors have largely laid the foundations for the modern superstructure of the art of surgery, there is a large class of investigators who combine the art of their practice with laboratory research—men whose inspirations came to them during their daily labors in the operating-room and at the bedside, where practical observations are made that, sometimes, suggest certain theoretic solutions, the verification of which are found in experimental research; this developed the practical surgeon who solved his own problems in the laboratory. Then there are those surgeons whose daily labors are so burdensome and whose time is so completely taken up with practical work that the solution of many highly important questions is delegated to laboratory specialists. Besides there are those whose daily labors consume their energy and time to such an extent that no time is left for research work or even for thought. Their practical experiences, and often valuable obesrvations, are lost to the profession. These men neither publish nor publicly discuss their methods. There are still others who fail to share the results of their experience not only because of lack of time, but either on account of lack of training in recording, classifying and analyzing their material, or because their interest in medicine and surgery is pecuniary rather than scientific. Often their profession is to them a bread-and-butter affair and not one of a progressive science.

Briefly, we have the specialist in research work, who devotes all his time to the laboratory; the practical surgeon, who verifies his conceptions in the laboratory; the busy surgeon, who delegates the solution of his surgical concepts to the research specialist; the surgeon who has neither time nor inclination to record or discuss his work, and the surgeon who is often a simple technician, who is not troubled by anatomy, pathology, etiology or diagnosis, whose whole stock in trade is rapidity of movement, and who glories in the large number of cases that pass through his hands.

We have another class, an ever-increasing class, which is preponderant in our section, whose contributions comprise a record of applied surgical science; of a critical analysis of certain surgical principles applied to definite pathologic findings at the operating-table; of a clear understanding of infections which has so broadened the field for surgical endeavor that many operators now group their special cases, affecting certain organs, by the dozen, hundreds, and in some instances by the thousands, that they may be enabled to make their deductions with precision. Some of these operators are associated with pathologists of the highest order, men who study a living pathology both at the operating table and in an adjoining laboratory. The immediate investigation of living tissue has become a common practice,

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* Chairman's Address before the Section on Surgery of the American Medical Association at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

making operative methods more precise, and the limitations of surgical possibilities better understood.

Surgery, then, has become more and more an exact science and its practice a highly specialized art. It became more an exact science because, like every other science, it was built up by the accumulation of unquestioned facts from contributions the world over. Philosophic deductions and preconceived theories and hypotheses into which facts were made to fit could not stand the test of a progressive science.

Still, we are not unmindful of the fact that the human machine involves many unsolved complex problems in the biology of a living organism. The mechanic has before him a less difficult task in the construction of a machine, and yet even he finds idiosyncrasies in many of his mechanisms that are built after the same model. He sometimes searches long before he locates and corrects a defect.

The surgeon, working under modern methods, can state in percentages the chances for restoration of function and the preservation of life in a large majority of surgical cases. But there remain many conditions in which the outcome is uncertain and in which the factors of safety are not fully understood. It is for the solution of these undetermined questions that the research laboratory is indispensable and the highly trained research specialist a necessity.

While the surgeon is thoroughly familiar with many factors that may operate for and against a favorable outcome, there still remain many unknown factors, in a large proportion of cases, that are difficult to estimate in given cases, and which affect the operative possibilities—factors that are not apparent at the time: consequently the operator often deals with unknown conditions, so that he cannot accurately estimate whether the task can be successfully accomplished or not. There remains to be worked out, therefore, many problems, biologic in character, that can be done only by highly trained laboratory workers, who must closely cooperate with the practical surgeon. The laboratory data, to be of practical value, must agree with the findings on the operating-table. The surgeon makes his observations on the living subject; the laboratory must elucidate and make them clear. The solution must be scientific. The methods of past ages have been speculative, which created, by induction, a philosophy that was often based on a very slender foundation of facts: facts that were often made to fit the philosophy. Our modern methods begin in the opposite direction, they consist of observation of natural phenomena. Preconceived ideas must give way to objective observations.

Much is required of the modern surgeon in the clear analysis of biologic detail. Therefore we must approach our problems in a scientific spirit. In order to do this we should be scientific investigators of the highest training. There should be a thorough knowledge of laboratory technic in all its details.

It becomes evident at once that this is not always possible. Surgeons who possess the highest and best skill, whose operative technic is beyond criticism, whose pathologic and diagnostic attainments are of the highest order, often men who have been pathfinders, can devote little or no time to laboratory research. Their time is completely absorbed with operative and hospital work and other professional duties. Their practical contributions have been of the highest value. Their theoretical deductions may have been right or wrong; only the research laboratory, in many instances, can determine the truth.

It may be said that all surgeons should command a thorough laboratory skill and the younger generation does. The leading medical schools insist that each student must have a thorough laboratory training that inculcates the scientific habit of thought and practice. He is encouraged to investigate unknown fields. To collect and correlate and analyze biologic, pathologic and technical data. He begins his professional career well trained, but, in many instances, the routine of daily duties absorbs his time, and the fatigue incident thereto unfits him for the laboratory. Perhaps his practical achievements absorb his enthusiasm. Possibly the laboratory never aroused a desire for that kind of work. Whatever the cause may be, we very soon find that the rank and file of the highly trained students cannot, or will not, devote any considerable time to research work. There remains, of the vast army of modern graduates, a small company of men who are imbued with the real scientific spirit—men whose love of the truth leads them where it may, outweighs all else. We are fortunate in that we have a growing class of such men. They often occupy positions in some of our large, well-equipped, highly organized and well-endowed hospitals.

They are often found in institutions that are controlled by or affiliated with medical schools, institutions in which there is a happy combination of hospital observation, of research work and teaching. Such an organization is capable of great good for progress. Then there is the isolated investigator whose ardor is not at all affected by his isolation. He works in solitude and alone and sometimes achieves epoch-making results. Take it all in all, the surgical profession may be divided into two groups: first, a small group, to whom we must look for progress and scientific advancement; and second, a group that composes the majority of surgeons who do the routine work of daily practice. Many of these are men of keen observation, who develop methods of practice based on clear ideas of living pathology found at the operating-table. It is true that many of our great discoveries and often epoch-making advances have been made by the practical surgeon; so thus the names of many men have become synonyms for certain procedures. Among Americans there are Ephraim McDowell and the beginning of abdominal surgery; Marion Sims and the repair of vesicovaginal fistula; Crawford Long and W. T. G. Morton and others and the discovery of anesthesia (1846); Fitz of Boston and the pathology of appendicitis (1886); Valentine Mott and the ligation of large arteries for the cure of aneurysms; Philip Syng Physick and the use of buried animal ligature and the manipulation in the reduction of dislocations; Bigelow of Boston and the reduction of hip-joint dislocation and litholapaxy.

Among the pioneer surgeons of this country who originated procedures may be mentioned John Warren, who in 1804 first excised the parotid gland; Dr. Dixi Crosby of Hanover, New Hampshire, who did the first interscapulothoracic amputation for the removal of the upper extremity in 1836; Wolcott of Milwaukee, who performed the first nephrectomy and Bobbs of Indianapolis, who did the first cholecystotomy. Russell of Oshkosh is credited with the first suprapubic hysterectomy for uterine fibroid. Willard Parker, in 1867, reported a number of cases of suppurative typhlitis and saved 75 per cent. of the patients. Joseph K. Swift of Easton, Penn., and Gordon Buck of New York are credited with the first use of extension and counterextension for the treatment of fracture of the femur. John Warren of Boston was the first to do cardiocentesis. John Pancoast did the first successful operation for extrophy of the bladder. Detmold of New York, 1849, first evacuated a brain abscess. These names comprise a few of the practical American surgeons whose skill and rare insight have established new procedures.

Here we have a host of practical men who evolved methods of practice and whose only opportunity was found in the operating-room. They had no laboratories, were not trained in research work, but they understood the problems as they presented themselves and they mastered them. They were unmindful of tradition. They created means that succeeded. They were pathfinders. The paths were opened and it became the duty of those who followed to elaborate and elucidate the unnumbered obstacles that were encountered and to solve the problems which, as surgery advanced, became more complex and more difficult of solution. The unraveling of minute changes in the grosser lesions required more refined methods of investigation. The surgeon soon found that he must have a special training or that he must have the assistance of specially trained associates. He then turned for cooperation to the laboratory specialist, whose services he found invaluable, in fact indispensable.

The laboratory worker entered into close association with the surgeon. The investigator frequently stood beside the operating surgeon and observed the living pathologic structure as it was exposed. He obtained a history antedating the removal of the diseased tissues, and he followed the later progress of the case in order to fully appreciate a pathology from its beginning to its end. He began to investigate living structures. We had too long drawn our conclusions from the findings of post-mortem material, which represented only the end results. The study of living pathology is rapidly becoming the practice. Therefore, in order that we may appreciate to the fullest extent the early tissue-changes, the investigator must cooperate closely with the operating surgeon in order that he may solve the problems for which he is especially trained. While he is working with the surgeon, he need not be deterred from the investigation of problems of his own choosing.

The one danger of the investigator, working entirely by himself, is that he may become too theoretic; therefore the benefit of more or less close association with the operating surgeon. Experience has shown that cooperation in scientific work achieves the best practical results. The practical worker needs the assistance of the theoretic departments. Science is continuously progressive. No one branch of it can stand by itself; there must be cooperation, correlation of the one with the others. In the solution of the problem the investigator should have his own way and his own methods. The surgeon may present the problem and, in a general way, indicate the methods to be followed, but he must refrain from dictation, especially as to details. Frequent criticisms on his part would be confusing to the investigator and might be detrimental to the necessary enthusiasm. The investigation may be long, it may not lead to immediate results—in fact, it may apparently lead away from the subject; there may be an accumulation of theoretic data that may appear unimportant, but a persistence, keeping ever in mind the original problems, will lead to a solution. In the course of an investigation other problems may be unraveled.

To secure training and development the research specialist must serve an apprenticeship in the laboratory. The first aim of the laboratory should be to teach the student to observe, to see, to think, to comprehend. This is the chief aim of all objective teaching which begins with the fundamentals. When these have been mastered, the work must begin in well-equipped laboratories presided over by highly trained investigators and teachers.

The clinical and laboratory instruction must continue side by side and there should be a constant agreement between the two. Should any discrepancy arise, we should cling to the clinical findings rather than to those of the laboratory, for the sake of the sufferer, until the time arrives when there is absolute harmony between bed-side findings and the laboratory. Every student should be trained in all the essentials pertaining to clinical as well as laboratory technic. The laboratory worker who ignores bed-side findings does not fulfil his mission. Among the many duties of the instructors, an important one is to take note of such pupils as excel in laboratory work, men who possess powers of accurate observation, and give them special attention and encouragement, and to select and segregate those who are particularly qualified. The qualifications for research work are: first, keenness of observation, which means unlimited repetition until the results are established, and, second, an ability to correctly interpret facts and a recognition of their relationships. "Now, it is evident that you cannot make a sound conclusion without the facts, and these are gained by observation with and without experiment. It is equally evident that an isolated fact is barren and dead. Facts are like cells of a complex animal, all interrelated, mutually affecting and affected."[1]

The student cannot become well qualified except under expert instructors; men who are, first of all, professional anatomists, physiologists, biologists and who are expert in every branch of technic pertaining to these subjects. They must have had a large experience in research work before they become instructors. The student, by the acquirement of technical skill as well as training in learning to see, to weigh evidence and apply principles to his practice, not only becomes qualified for research work but it would seem that he is better prepared to do every-day practical surgical work, if he should choose to become a surgeon. I am of the opinion that the laboratory of the medical school should have in view not only the acquirement of routine knowledge of the various subjects, but the training should have the aim of training men both for the purpose of research work and for becoming proficient in operative technic; to better prepare them for the practical duties of their profession. The first consideration in the organization of the medical school has become the selection of men. Instructors are more important than equipment. No equipment can be adequate for a purpose until we have the man who plans and selects and knows how to utilize it to the best advantage. On the other hand, no matter how good the man is, he must have at hand all material for his purpose and he must have a place in which to work. To be of the greatest assistance to the surgeon, he must have a well-equipped laboratory and library and he must be so situated that he works in close intimacy with a surgeon in a well-equipped surgical hospital. He should be able to secure his pathologic material immediately after its removal from the body, so that he may investigate fresh tissues and not be dependent altogether on embalmed material. The surgeon must give every possible assistance and deliver his material in such a condition as to be most available to the pathologist for instruction and investigation.

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[1] Lyon, E. P.: Equipment and Instruction of the Laboratory Years, THE JOURNAL A. M. A., May 27, 1911, 1539.

The research laboratory should combine the features of all the other special laboratories. There should be an equipment for anatomic, physiologic, chemical, microscopic and biologic experiments. In a modern medical school in which these five special laboratories are situated in close proximity to the hospital, special research work may be conducted in one or all of them and the work may be carried from one to the other as may be necessary. As a matter of convenience, however, the work may be expedited best in a laboratory where the necessary special apparatus can be brought together.

In addition to the aforesaid special laboratories may be added a well-equipped surgical operating room where operations may be done on animals as taught in the Hunterian Laboratory of Experimental Medicine at Baltimore and the Institute for Experimental Medicine in St. Petersburg and many other institutions in this country and abroad. The principles of surgery should be taught, not special operations. The chief criticism against such surgical instruction has been that abdominal surgery has received the main attention, and that the pupils having had an operative course have been inclined to begin their practical activity with abdominal surgery.

To have all of this equipment is desirable and adds much to the convenience of the experimenter. But it must not be the first essential. The laboratory director is more important than buildings. A resourceful investigator outweighs fine apparatus. A skilled research-worker can, to a large degree, construct his own apparatus. In selecting a school, the student should ascertain whether or not it is well manned before he takes into account architecture and apparatus. As to being well manned, I mean manned with men who are patient, proficient, progressive; men who are not satisfied merely to investigate and verify what others have done, but who must advance, develop and create. Whether research worker or surgeon, or both combined in one, he must have time enough to teach and instruct the student. I have no patience with the laboratory investigator who says that he abhors the routine of teaching. No man is better qualified to teach than the one who has worked out the problem.

We must agree with Welch[2] when he says:

> A tendency at the present time to separate scientific research from the work of teaching has certain advantages, but has, I believe, even greater dangers. Scientific investigation in medicine, during the last two decades, has led to results of such vast importance as regards our power over disease that it makes an appeal to the public and to philanthropists much stronger than does medical education. Hence it is that large funds are available for institutions of research and for research hospitals which have no connection with education. Hospitals are often more eager to contribute to scientific medicine than to participate in the work of medical education and in a number of instances have been provided with funds and laboratories intended solely for scientific research. While there is room for such independent endowments and institutions, the roots of fruitful scientific work lie in the educational system, and if the latter is neglected the former will suffer. The traditional home and the most favorable environment for productive research is the university, and hospitals in affiliation with universities offer, I believe, the best opportunities for the promotion of medical science and art. Above all, the teacher should be an investigator.

If it is impossible to combine in one plant all the aforesaid special laboratories and one only can be had, then it must be admitted that the research laboratory should be in close proximity to the physiologic laboratory with trained men. Physiology is the foundation on which clinical and research work must rest; it is the beginning. Clinical work, whether medical or surgical, can have no practical results unless founded on physiology. *Therefore we must have a clinical physiology* (Yandell Henderson).

The labors of Brown-Séquard, Claude Bernard, Ludwig, Fritch and Hitzig were fundamentally physiologic and necessary to the elucidation of clinical conditions. Bernard's discovery of glycogen, a physiologic study, led to an understanding of diabetes. His discovery of vasomotor nerves illuminated the problem of animal heat and fevers.

Clinicians have sometimes been slow to adopt and apply to practical use methods and means of common practice in the physiologic laboratory. An example is the measurement of blood-pressure in millimeters of mercury which had been done by physiologists fifty years before it found its way to the clinician (Yandell Henderson).

Only in very recent years has the surgeon availed himself of the value of the sphygmograph. The physiologist had already accumulated an immense fund of data.

Sauerbruch and Brauer made use of what was long since common knowledge of the physiologist—knowledge that enabled them to gain access to the interior of the thorax. The work of Crile on the subject of shock was an elaboration of the physiology of the vascular and nervous system. Cushing's splendid work on the pituitary body was a physiologic and anatomic study. In this same category belonged Erlanger's work on heart-block and Cannon's studies on normal movements of the stomach and intestines, and Meltzer on intratracheal insufflation. All of Carrell's work and that of Matas and Crile on blood-vessel surgery has been physiologic. When Senn, Murphy, Halstead and Connell taught us their methods of intestinal suturing, we found it to be based on physiology.

Since all of our therapeutic endeavors are directed toward an attempt at a restoration of a disturbed or perverted function to a normal or physiologic condition, all of our experimental work must be fundamentally physiologic; and, finally, when we endeavor to use all of this work in a practical way, that is, to clinical ends, we have a clinical physiology. The more we know of physiology the more we know of clinical conditions.

The hospital laboratory should primarily cooperate with the staff in the unraveling of the nature of the diseases afflicting the inmates; in other words, in assisting and determining a diagnosis. Its other function, which may be far more important, consists in the study of undetermined problems. The laboratory staff should be so divided that one or more members should confine their time to the routine diagnostic work, which should have its own equipment and a separate laboratory. The research work should be entirely separated and have its own department. Its staff should have absolute freedom for its own work and in the working out of surgical problems. The surgeon should be consulted so that he may cooperate and aid in the studies. The surgeon is confronted, daily, by unsolved conditions; so he may suggest the kind of work to be done, and may indicate the object to be achieved. In this way the efforts of the research worker and surgeon will lead to definite ends. Crile, when he observed the disastrous effects of shock.

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[2] Welch, William. The Hospital in Relation to Medical Science, The Journal A. M. A., Nov. 19, 1912, p. 1667.

both traumatic and emotional, drew his own conclusions as to the underlying cause. He called to his aid his laboratory colaborers and together they determined the cell-changes in the brain.

Aside from the numberless questions pertaining to the determination of limits of safety in surgical procedures that must be worked out, such as the questions in relation to immunity and to the immense field of serology, the margin of which has only been touched, vast unknown possibilities are in store for us. The science of pathologic tissues and bacteriology are succeeded by a biochemical era. Much work has been done and an immense literature has accumulated and a vast army of earnest men have established innumerable facts in immunology and serology. Many principles have been established and yet many methods of practical application are still involved in much uncertainty; but the future will be full of revelations.

The unsolved question of the etiology of neoplasms offers an unlimited field for work. Is cancer due to a micro-organism or a perverted metabolism? Cancer seems to be increasing and why? While questions such as these are yet unanswered, an immense amount of information has accumulated. Much positive knowledge regarding its history, distribution and development; much that is more than suggestive as to its cause, and much negative evidence as to what does not cause cancer is at hand. Cancer research has been carried on with commendable activity since 1901 and 1902, when Loeb in America and Jansen in Denmark succeeded in transplanting cancer in rats and mice.

We have learned that cancer-cells may apparently grow indefinitely by transplantation through many generations. We have seen that cancer retrogresses under certain conditions; that there is such a condition as immunity to cancer; that cancer may, at times, gain in virulence. Experimental research seems to point to the cancer-cell as the real parasite rather than to a specific and distinct micro-organism. Family histories seem to point to heredity, but experimental research has taught us nothing. Mice have apparently been cured of cancer by serum therapy; what this may lead to in its application to man, is still uncertain. Coley seems to have established the principle of the cure of sarcoma by the use of serum of streptococcus and *Bacillus prodigiosus* in 10 per cent. of cases. Why the serum fails in 90 per cent. is a question for future determination. Ehrlich thinks that the beginning of the end of the cancer problem is in sight. I am sure that our optimism in relation to the eventual discovery of a cure by experimental research is well founded.

Much more might be detailed as to the great work on which the investigator has only begun. The possibilities are limitless. The work ahead is arduous and difficult. The rewards will be rich. The future of surgery and medicine will occupy a higher plane than any of which the optimist now dreams. For the present, the surgeon recognizes the necessity of the closest cooperation with the laboratory specialist. The one needs the other; both must work side by side.

106 South Thirty-First Avenue.

Need of Good Pre-Medical Education Recognized Thirteen Hundred Years ago.—"For a medical man should know the ars rhetorica, that he may be able to support with sound arguments the matters which he deals with; and also the ars dialectica, so that by the exercise of reason he may investigate the causes of sickness for the purposes of cure."—Isidorus Hispalensis, Bishop of Seville, 600 A. D.

YESTERDAY, TO-DAY AND TO-MORROW

THE ACTIVITIES OF THE COUNCIL ON PHARMACY AND CHEMISTRY *

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It seems but yesterday, though it was eight years last February, that the Council on Pharmacy and Chemistry was founded by this Association, with the hope of correcting, as far as possible, the evils which were current in the field of materia medica. The story of this Council has been told repeatedly; but it seems to me worth telling again, partly because it may be new to some of the younger members at least; partly because it contains some facts and lessons which can scarcely be repeated too often; and partly because the present activities of the Council can be appreciated, and therefore can be valuable to the medical profession, only in the light of its history.

THE EXPLOITATION OF PROPRIETARY REMEDIES

The extraordinary profits derived from the sale of exclusive pharmaceutical specialties had flooded the market with such preparations. As the natural result of unrestrained competition, these were being exploited with ever increasingly extravagant claims. The relatively recent discovery of the therapeutic possibilities of the synthetic chemicals, which were patented and therefore proprietary, was used to give a pretense of scientific respectability to all kinds of uncritical statements; and under this cloak of pretended respectability the most unscientific nostrums were not slow to seek shelter. Even men of scientific training found it difficult, if not impossible, to sort this confused material by their individual efforts, and were therefore obliged to treat it more or less uncritically, and thus, directly or indirectly, wittingly or unwittingly, lend the weight of their authority to this exploitation. Much more helpless was the general practitioner. Without the training, the time or the material for discriminating study, assailed from all sides by the din of the detail man, by the laudatory "literature" of the advertising pages, the reading-matter, and even the editorial comments of respectable medical journals, he was a helpless and easy victim for the skilful proprietor.

Not content with this form of exploitation, many manufacturers used their success with the profession to introduce their remedies directly to the public under a different name, or even under the same name, with claims still more extravagant, if that were possible, and backed now by the authority of professional endorsement.

In any case, the consumer, as usual, "paid the freight," not only by paying extravagant prices for useless drugs, but even more seriously, because the uncritical habits thus engendered made for careless practice in every other respect. It may well be questioned whether the discovery of the synthetic drugs did not at that time work vastly more harm than good to the public. Their ultimate effect, of course, like that of every scientific discovery, must be useful; indeed, we are now reaping some of the genuine benefits. Then, however, the good was offset by the evils which they encouraged.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

PRELIMINARY WORK OF THE COUNCIL

The individual physician, the individual scientist even, was practically helpless in this morass; and it was to be the function of the Council to extend a helping hand by doing, through concerted effort, what no single individual could do alone. I must pass over this work in a most sketchy manner, although even the details would be interesting to many of you. The task of the Council was truly herculean. The simile of the Augean stables had rarely a more apt application; and it was much to be feared that, as with the fabled Hydra, two heads would appear for each one struck off. It seemed worth while, however, to make a determined effort to sift out at least the most serious of the abuses, with the hope of clearing the field for a more careful study. That, in itself, would be a helpful and not impossible achievement. To this task the Council turned "without fear or favor," and for some time the work of the Council was a succession of exposures, so much so as to draw on the Council the reproach of sensationalism. In a sense the accusation was just, but the reproach of sensationalism did not lie with the Council, but with the frauds which it was obliged to bring to light.

NEW AND NONOFFICIAL REMEDIES

Even at this time, however, the constructive side was not neglected. You, as practitioners, wish to be warned against lies, so that you may not make your patient more ill; but still more, you wish to be informed of facts so that you may help to make him well. The Council has always regarded it as its most important task to make these facts available, and to help the practitioner to recognize what are facts and what are not. For this purpose it issued the book, New and Nonofficial Remedies, which is revised annually. This little book should be in the hands of every practitioner. It gives reliable information as to the origin and chemical and physical properties of these drugs, their composition, solubility, dosage, etc., and a brief statement of their actions and uses.

The last-named part is naturally the most unsatisfactory, for most of the newer substances are still on trial. The Council aimed to steer a conservative course, but was inclined to give the benefit of any doubt to the honest manufacturers. For this reason, the earlier editions especially contain considerable matter that was doubtful, notwithstanding the great mass of material that had been eliminated.

This elimination is still going on, and every new edition shows improvement over the last. In future the descriptions will aim to distinguish more sharply between those claims which the Council considers established and those which are admitted only tentatively as neither proved nor disproved. The claims of the manufacturers are being weighed more and more carefully, and more exacting objective evidence is being demanded. The Council is inclined to take the position that the approximate value of a new drug should be determined exhaustively, on patients as well as animals, *before* it is advertised to the profession. This requirement means generally that experiments should be made more intensively and under more exacting conditions. The general practitioner should not be called on to do the preliminary trying-out of new remedies. Experiences gathered in private practice are by no means without value, but their value is uneven, and it takes too long to arrive at a safe judgment on the basis of scattered observations.

In all this work the sincere cooperation of the manufacturers would be of the highest value, and many firms have shown a most laudable desire to extend this cooperation. Others, however, apparently fail to recognize that the Council is endeavoring to secure improvements which will finally redound to the benefit of every honest manufacturer. They have not taken kindly to the idea of having their products and methods criticized. On the whole, it may be said that the manufacturers do not seem to have realized fully the ultimate benefits which they could derive by conscientious adherence to the rules of the Council. Nor have the medical journals come up to their opportunity. With a few notable exceptions, they are still carrying advertisements of remedies whose value is not only doubtful, but which have been exposed as more or less fraudulent. There is no doubt that this is a violation of professional standards. The principle of "let the buyer beware" is coming into disrepute even in the commercial world, and has never been countenanced by the medical profession. Nor is the plea of financial necessity a valid one. A medical journal, as any other enterprise, which owes its existence to dishonest means—and many of the advertisements are palpably dishonest—should go out of existence. This evil has been discussed to the point of weariness; and so have the perfectly obvious means of ending it. That these have not yet been put into effect is my only excuse for again burdening you with the subject. Perhaps after a time the cumulative suggestion may have some result.

The N. N. R. is not an ideal guide to materia medica. On the one hand, it does not describe the older standard remedies, because they are outside its scope; on the other hand, it describes many more new drugs than are really needed. Some of these are so experimental that their general use is scarcely advisable, although the available information about them should be accessible. Many others are little more than duplications. The change of a side-chain makes a new drug; but it may have no more importance than would a change of flavor. The evils of too many remedies are self-evident, and have been so often discussed that I need not enumerate them. I need only repeat that a relatively few well-studied drugs can accomplish much more than a large number of ill-understood modifications. More progress can be expected by simplification than by multiplication. This has been recognized by the establishment of several official "restricted lists," by the Associated State Boards and other bodies. It is not the intention of these lists to restrict the liberty of any physician to employ any drug which he believes valuable; but they serve the useful purpose of concentrating attention on those drugs which general experience has shown to be the most valuable.

PRESENT ACTIVITIES OF THE COUNCIL

There is need of an authoritative compend of these established drugs, giving in handy and convenient form the information which practitioners need in every-day prescribing. To fill this want the Council has prepared a little book on "Useful Remedies." That there may be no misunderstanding, I wish to explain that the present edition is little more than a program, issued for the purpose of eliciting suggestions. The book itself, which will be perhaps double the size of the present volume, will contain about the same drugs, and such physical and chemical characters and incompatibilities as are practically important; but it will give much more attention to their special indications and contra-indications, methods of administration, dosage, etc. It is not intended to take the place of the Pharmacopeia, for it will contain only the most indispensable pharmaceutical and chemical information; nor is it intended to take the place of pharmacologic text-books, for the actions will be discussed very briefly.

Another committee of the Council has prepared a series of educational articles on serums and vaccines. These subjects are developing so rapidly that the practitioner finds it difficult to keep abreast of the achievement; and as was formerly the case with the synthetic chemicals, he is at a loss to distinguish between established facts, tentative conclusions and discarded theories. The notable victories from this field have, as usual, attracted a crowd of camp-followers who, if unrestrained, would bring the whole subject into discredit. The Council considers it a duty to caution against the hasty acceptance of unusual claims until these have been thoroughly investigated. In particular, "mixed" inoculation must be regarded with suspicion. Starting with the fact that it may be advisable to inject more than one vaccine when more than one organism is found to be concerned in the particular infection, enterprising manufacturers have proceeded to prepare all sorts of "fancy mixtures," aimed to cover equally fanciful mixed infections, without troubling the physician to ascertain whether or not the patient is really infected with these particular organisms. We may perhaps concede that a scattering shot of this kind may sometimes happen to hit the disease harder than it does the patient. The same was probably true of the ancient Theriaca Andromachi Junioris, whose sixty-five ingredients appear childishly simple in comparison with the neopoly-pharmacon of to-day. At least, the Theriaca had the great advantage of doing no harm, if it did not do much good.

I had intended to speak at some length on some of the other activities of the Council; particularly on the work of its Committee on Therapeutic Research. That, however, is so important a subject that it deserves better than to be brought in at the end of an address. I will therefore reserve it for another occasion.

RESULTS

What I have already said will show you the progressive evolution of the Council and will enable you to judge what it has accomplished in the past and what it is likely to accomplish in the future. Naturally this work has not been done without cost. The Association has to carry the financial burden; the members of the Council and the institutions with which they are connected have to sacrifice their time; and since the laboring hours of the day are more or less limited, other work had to be sacrificed also. Has the cost been worth while? Since there is no direct way of evaluating the results of such work, we can only compare conditions as they were before the foundation of the Council with what they are to-day.

I have spent sufficient time on the conditions as they were. How are they now? I may as well confess that they are not what they might be; but they are vastly better than they were. Secret nostrums, worthless remedies, blatant advertisements and extravagant claims have not been suppressed; and while some frauds have sunk into oblivion, others have arisen. It is significant, however, that new nostrums are not appearing at the former rate; secret remedies are viewed with more suspicion; testimonials of worthless drugs are not written with the same liberality by careless, if well-meaning physicians; the tone of the advertisements has become much less extreme, the claims much more conservative. All this means that the profession is more critical, less inclined to believe that the latest advertised fad must be best; less reliant on biased manufacturers as the exclusive source of therapeutic information. The interest in exact therapeutic observation and experiment is much greater. The teaching of these subjects in our medical schools has vastly improved. I do not know how much the work of the Council has contributed to these advances; but the fact that the advances have been much greater here than abroad seems to show that the Council has at least some share. It is interesting to note that Germany, so long the leader in intellectual improvement, has appreciated the lesson, and has organized a commission along similar lines.

ABSTRACT OF DISCUSSION

Dr. F. E. Stewart, Philadelphia: Such a paper as this is a valuable contribution to our work. I think that the work that Dr. Simmons has done for the Association cannot be spoken of too highly. There are several things that should be considered more carefully. One is that new drugs ought not to be introduced until submitted to the Council. Manufacturers would be very glad, I am sure, to submit drugs to the Council for thorough investigation as to their pharmacology and therapeutics before placing them on the market. If it could be done, it would save thousands of dollars. I do not think that the manufacturing houses should teach therapeutics at all. It is not the field they should work in. Their work should be confined to their legitimate channel, to manufacture drugs properly and disseminate information by circular without any attempt on their part to create a demand by misleading advertisements or suppressing things that should be known to the profession. I believe that if the Council can secure this cooperation it will be a great advantage to all concerned.

Dr. Bernard Fantus, Chicago: I should like to add a word of appreciation for "Useful Remedies," the new book which is being issued by the Council. We have been laboring for some time under the great disadvantage of having to teach too many drugs to our students in order to prepare them for state board examinations, as many of you know. Considerable thought has been expended on the proper list of drugs, a knowledge of which might properly be demanded by state boards from candidates. It seems, however, that these lists have not yet been adopted to any great extent, and it is hoped and it seems to me may be hoped very reasonably that his book may fill the need of giving us a syllabus to which we should hold our students as perhaps a minimum requirement and which the state boards might be asked to adopt for the preparation of their examination questions.

Mr. W. J. Wulling, Minneapolis: I regret that this address and the discussion could not be heard by all physicians. It is to be taken for granted that all those present are in agreement with the necessity for a restricted materia medica, but not all of those responsible for this wide materia medica are here. The average text-book on materia medica includes too many obsolete drugs. A few well-selected drugs will answer all purposes of therapeutics, and the tendency, which is toward that end, is commendable. There were evidences of this tendency, however, when I was a very young man, and I do not see that sufficient progress has been made. I believe that the cooperation of pharmacists is required to bring about the restricted materia medica. While I thought in the beginning that pharmacists should revise the drug list, the physicians have done it so much better than the pharmacists could have done at the time that I am glad they undertook the work instead of the pharmacists. The pharmacists are giving their full cooperation and sympathy to this kind of work because it affects them almost as deeply as it affects the physician. The physician who has made a thorough diagnosis should not feel that he has finished his work. He is judged by the people at large by his ability to relieve the patient of pain and illness, and unless there is a reliable materia medica to aid the diagnosis he has not completed his work; this has been recognized by schools of medicine lately. The important medical schools have added subcourses to their curriculum and are making it necessary for physicians to take courses in subjects that will make them better practitioners.

Dr. Alexander S. von Mansfeld, Ashland, Neb.: This paper has furnished an excellent text to be taken home and enlarged on before county societies; this could be done through the whole year without being exhausted. The book entitled "Useful Remedies" is misnamed. It should be called a commentary on good remedies; that would come home at once in our criticism of the man who made the statement in regard to the druggists having thought of doing that thing. Harter fifty years ago in Germany in his "Commentary on the Pharmacopeia Germanicum" did just this. The publication of this little work as outlined by Dr. Sollmann will be a good means of extending to the Pharmacopeia of the United States the things that it might have contained to the advantage of the medical profession. I am a little bit impatient of the shortcomings of the Pharmacopeia of the United States, and yet I am proud to say that I was one of three men who insisted on the standardizing of the Pharmacopeia. When the bill was passed, I was chairman of the Committee on Pure Foods of the American Medical Association. Now let us by all means not forget the main point at issue. We have a commentary; and whatever the little new volume is named it will make up the defects of the Pharmacopeia. I have to take up first one book and then the other, and I am getting tired of this waste of time and am going to charge the time to some one.

Dr. Ralph St. J. Perry, Farmington, Minn.: In the list of useful remedies I think it would be a good idea if the Council could send a number to every examining board in the United States and insist on their using it. I remember that when I first came into Minnesota, a number of years ago, I was given ten questions, two of which related to "patent medicines." We must all admit that the manufacturing pharmacists are in the business for the money they can make out of it, and from the liberal way in which they advertise and distribute samples I am pretty sure that none of them are going to die in the poorhouse. My experience is that the average manufacturing pharmacist is honest. I remember that a few years ago when I was in the tropics I ran across an excellent substitute for santal. I collected a large quantity (at that time no Council on Pharmacy was in existence), some of which I sent to Josiah K. Lilly, because he was an old schoolmate and I had confidence in him. The Lilly people investigated it and turned it down, saying that it was not so good as some other remedies. If they had wanted to exploit the drug they could easily have done so. Some years ago I found a remedy which I thought good. I submitted it to Parke, Davis & Co. and Nelson Baker. They both told me that it was without value. Since then, however, it has been taken up and universally used throughout the United States by a good many physicians. Another thing which the Council ought to emphasize to the general practitioner is that it is not their aim to restrict the individual liberty of prescribing. Many physicians think that the object of the Council is to prohibit or limit their prescribing. It is not; they can prescribe any remedy that they want to. The Council acts in an advisory, not mandatory, capacity. If the physicians of the country understood this, they would have kindlier feelings toward the Council.

Vital Statistics Essential.—Health officers tell us that public health work without mortality statistics is like ocean navigation without chart or compass—aimless and meandering. Agencies for the prevention of blindness cannot save the eyes of infants if infants come into the world unannounced and unrecorded. Child labor cannot be regulated until birth registration gives us the actual ages of children and compulsory education can only be partially successful until that time. The National Children's Bureau must remain largely inactive until births are recorded.—Birth and Death Bookkeeping, bulletin issued by the Association of Life-Insurance Presidents.

ANAPHYLAXIS IN THE DIAGNOSIS OF CANCER *

J. LOUIS RANSOHOFF, M.D.

CINCINNATI

Two years ago I published a preliminary report[1] on the experimental study of anaphylaxis in cancer. I showed that there is a decided difference in the anaphylactic reaction when guinea-pigs sensitized with blood-serum from a normal individual and other guinea-pigs sensitized with blood-serum from a cancer-bearing individual are both given a final dose of blood-serum from a cancer-bearing individual. Two series of guinea-pigs were used in each experiment. Pigs of Series A were sensitized with normal blood-serum in doses varying from 0.01 to 0.5 c.c. Series B was sensitized with the same amounts of blood-serum from an individual bearing an advanced cancer. After two weeks, when sensitization was established, each pig, of both Series A and Series B, was given an intraperitoneal injection of 5 c.c. of blood-serum from a cancer-bearing individual. The results were decisive. The pigs of Series A, those pigs sensitized with normal blood-serum, had symptoms of anaphylaxis which appeared promptly and were of the usual severity. The pigs of Series B, those pigs sensitized with blood-serum from a cancer-bearing individual, had mild, if any, symptoms. In Series A the symptoms appeared promptly; while in Series B they were, when present, delayed. Evidently the pigs of Series B, those sensitized with cancer blood-serum, had been immunized against the anaphylactic reaction, as they did not react when a final dose of cancer blood-serum was injected.

From these experiments I inferred that there is some specific substance in the blood-serum of cancer-bearing individuals probably absorbed from the cancer itself. Since then I have applied this method of showing the difference in the anaphylactic reaction of normal and cancer blood-serum to the diagnosis of cancer. As a sensitizing dose of 0.1 c.c. gave the best results in the preliminary experiments, I am now using it in all the work.

Pigs weighing from 200 to 400 gm. are most susceptible and are used in all tests. The pigs of each group are divided into two series, A and B. Each pig of Series A is sensitized with 0.1 c.c. of blood-serum from a normal individual; each pig of Series B, with a like amount of blood-serum from an individual bearing an advanced cancer of any type, the diagnosis confirmed by microscopic examination. After ten days the pigs are ready for the diagnostic test. From 3 to 5 c.c. of blood-serum from the suspected case are injected intraperitoneally into Pigs A and B, the dose being graded according to the weight of the pigs. When the blood-serum is from a normal individual, both Pigs A and B have the ordinary prompt severe symptoms of anaphylaxis. In case the blood-serum is from a cancer-bearing individual, Pig A shows the ordinary severe symptoms, Pig B shows mild symptoms, if any. Even when mild symptoms are present, they are delayed.

For example: Pig A shows distinct symptoms in from one to two minutes, while the symptoms of Pig B may be delayed from five to ten minutes or even longer. So marked is the difference in the symptoms of the two pigs that an untrained observer may interpret the reaction. In fact, all the tests have been interpreted by workers in the laboratory. Sensitized guinea-pigs are kept in readiness for tests when the occasion arises. The pigs remain sensitized for an indefinite period. In some cases correct tests have been made ten weeks after sensitization.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

*From Cincinnati Hospital Laboratory.

[1] Ransohoff, J. L.: Experimental Study of Anaphylaxis in Carcinoma, The Journal A. M. A., July 8, 1911, p. 103.

At the risk of repetition I must again state that the tests have been interpreted by fellow workers in the laboratory, students and laboratory attaches. In all I have fifty cases to report. Thirty of these were cancer (Table 1) and twenty were non-malignant (Table 2). The tests were never positive unless cancer was present. The anaphylactic diagnosis of cancer was not made unless proved by subsequent operation, post-mortem, microscopic examination or, in a very few cases, by the course of the disease; namely, the death of the patient with all the clinical symptoms of cancer. In four cases of cancer the test was negative. Strange to say and difficult to explain, these were, with one exception, advanced cases: (1) advanced case of cancer of the stomach; (2) advanced case of cancer of the gall-bladder; (3) advanced case of cancer of floor of the mouth; (4) very early cancer of the stomach without tumor formation.

In all the cases examined the margin of error was 8 per cent. Therefore, the correct diagnosis was made in 92 per cent. Taking the cancer cases alone, the error is somewhat larger, 13.3 per cent. incorrect, or 86.7 per cent. correct, diagnosis. The tests made in all classes of cases according to the material available were as follows: uterus, 4; breast, 10; tongue and floor of mouth, 5; stomach and intestines, 6; thyroid, 1; lymph-nodes, 1; gall-bladder, 2; prostate, 1.

Dividing the cases into incipient, operable, and inoperable, there were six incipient, twelve operable and twelve inoperable. By *incipient I mean* cases with

TABLE 1.—CANCER CASES

No.	Clinical Diagnosis Cancer.	Anaphylactic Diagnosis	Confirmation.	Remarks
1	Uterus	Cancer	Microscopic	Inoperable.
2	Uterus	Cancer	Microscopic	Inoperable, test positive with cancer suspension.
3	Breast	Cancer	Microscopic	Advanced.
4	Tongue	Cancer	Microscopic	Operable.
5	Stomach	Cancer	Operation	Advanced.
6	Thyroid	Cancer	Course	
7	Uterus	Cancer	Microscopic	Late.
8	Stomach	Cancer	Operation	Patient died 6 months after operation.
9	Breast	Cancer	Microscopic	Incipient.
10	Lymph-nodes	Cancer	Microscopic	Test also positive with cancer suspension.
11	Breast	Cancer	Microscopic	Incipient.
12	Breast	Cancer	Microscopic	Operable.
13	Gall-bladder	Cancer	Operation	Cancer of gall-bladder spreading to liver.
14	Face	Non-malignant	Microscopic	
15	Palate	Cancer	Microscopic	
16	Breast	Cancer	Microscopic	Inoperable.
17	Breast	Cancer	Microscopic	Inoperable.
18	Tongue	Cancer	Microscopic	Incipient.
19	Sigmoid	Cancer	X-ray and course	Patient died 6 months after examination.
20	Breast	Cancer	Microscopic	Operable.
21	Uterus	Cancer	Microscopic	Advanced.
22	Stomach	Non-malignant	Microscopic	Incipient.
23	Breast	Cancer	Microscopic	Incipient.
24	Breast	Cancer	Microscopic	Incipient.
25	Stomach	Non-malignant	Microscopic	Late.
26	Intestine	Cancer	Operation	
27	Mouth	Cancer	Microscopic	
28	Breast	Cancer	Microscopic	*Test also positive with cancer suspension.*
29	Prostate.	Cancer	Course	
30	Gall-bladder	Non-malignant	Microscopic	

Number of cancer cases	30
Failures	4
Correct diagnosis	86.7%

TABLE 2.—NON-CANCER CASES

No.	Clinical Diagnosis	Anaphylactic Diagnosis.	Confirmation.	Remarks
1	Tuberculous lungs	Non-cancer	Tbc. bacilli in sputum	
2	Myocarditis	Non-cancer		
3	*Normal*			
4	Tuberculous peritoneum.	Non-cancer	Operation	*Still living 2 years after operation.*
5	Enlarged liver	Non-cancer		All evidences of cirrhosis.
6	Gall-stones	Non-cancer	Operation	Gall-stones obstructing portal vein simulating cancer.
7	Cirrhosis of liver	Non-cancer		
8	Secondary anemia	Non-cancer		Cured by medical treatment.
9	Sarcoma of neck	Non-cancer	Microscopic	Enormous lymphosarcoma.
10	Leukoplakia of tongue	Non-cancer	Microscopic	*Patch removed; no recurrence after 1 year.*
11	Syphilis of mouth	Non-cancer	Wassermann positive	Cleared up under salvarsan.
12	Syphilis of palate	Non-cancer	Wassermann positive	
13	Catarrhal jaundice	Non-cancer		Cleared up under medical treatment.
14	Cirrhosis of liver	Non-cancer		
15	Chronic intestinal stasis.	Non-cancer		Cleared up under medical treatment.
16	Tuberculous cervical adenitis.	Non-cancer		
17	Acute intestinal obstruction.	Non-cancer	Operation	Obstructed by band.
18	Papilloma of bladder.	Non-cancer	Microscopic	
19	Normal	Normal		
20	Normal	Normal		

Number of non-cancer cases	20
Correct diagnosis	100%
Total number of all cases	50
Correct diagnosis	92%

small tumor formation and without involvement of the lymph-nodes.

In three cases a very interesting experiment was made. The tests were made in the ordinary way with blood-serum and found positive. The cancerous tissue from these cases, procured at operation, was ground in a mortar with powdered glass, emulsified with a small amount of salt solution and placed in an incubator for an hour. The suspension was then centrifuged and the supernatant fluid injected into guinea-pigs sensitized in the usual way. In all three cases the typical positive cancer reaction was obtained. Although no final conclusion can be drawn from these experiments, they certainly seem to indicate that the substance in the blood-serum in reality originate from the cancer tissue itself.

The twenty negative cases may be divided into the following classes: tuberculosis, 3; normal, 3; syphilis, 3; hypertrophic cirrhosis of liver, 1; myocarditis, 1; sarcoma, 1; gall-stones, 1; cirrhosis of the liver, 2; anemia, 1; jaundice, 1; acute intestinal obstruction, 1; intestinal stasis, 1; papilloma of the bladder, 1.

The most interesting classes of cases are the tuberculous, syphilitic and sarcomatous. There were three cases of tuberculosis; one of the peritoneum with tumor formation, one of the lung with enlarged bronchial glands, and one chronic suppurative cervical adenitis. The syphilitic cases were all of the tertiary type one syphilitic leukoplakia of the tongue, one syphilitic inflammation of the mouth and nose, one ulcer of the soft palate. The latter two cases gave positive Wassermann tests and yielded to salvarsan. The leukoplakia of the tongue gave a negative Wassermann. The leukoplakic patches were removed and microscopically showed the typical evidences of chronic inflammation.

CONCLUSIONS

1. From these tests it seems possible that the anaphylactic test may prove an aid in the early diagnosis of cancer. The five early cases, which gave positive tests, seem particularly significant.
2. The margin of error (8 per cent.) is not large enough to invalidate the test.
3. The most valuable single factor is the uniformity of negative tests in non-malignant cases. There seems no possibility of making a diagnosis of cancer, when cancer is not present.
4. A positive diagnosis seems absolute evidence of the presence of cancer.
5. This test needs further trial by other workers.

19 West Seventh Street.

ABSTRACT OF DISCUSSION

Dr. Oscar Berghausen, Cincinnati: In the ordinary case of cancer in which the tissue is accessible, the microscopic examination is sufficient, but when that is not the case some other means of diagnosis must be sought, such as the method described by Dr. Ransohoff. This method gives some promise of being a valuable means of diagnosis. The fact that 87.7 per cent. of accurate diagnoses were made in cancer cases is indeed most encouraging. It is very seldom that any method of diagnosis by clinical or specific means reaches that high rate. The change following the injection is very marked, as in a case at which I had the pleasure of being present. The experiments were all made at the laboratory of the Cincinnati Hospital, and several men made the observations to confirm those of Dr. Ransohoff. The test differs from previous tests along anaphylactic lines in that normal serum, as well as cancer serum, was used.

SURGERY OF THE THYROID

OBSERVATIONS ON FIVE THOUSAND OPERATIONS *

CHARLES H. MAYO, M.D.
ROCHESTER, MINN.

During the twenty-five years ending May 14, 1913, 5,000 operations were performed on the thyroid in the clinic at St. Mary's Hospital. These operations were done on various types of goiters and may be classified as follows:

Simple goiters	2,396
Including	
Transplantations in cretins	11
Operations for malignancy: carcinoma, 52; sarcoma, 7	59
Operations on syphilitic thyroids	1
Exophthalmic goiters, including double and single ligation, extirpation, partial thyroidectomy	2,295
Early operations not clasified, majority simple goiter	309
Total	5,000

An increase in the size of the thyroid may be physiologic or pathologic. In the higher invertebrates the gland has a marked sexual relationship, and through this association we have a suggestion that the thyroid may be a factor in the manifest disturbances which occur at certain periods, especially in the female, as the well-known goiter of adolescence, the congestion of the thyroid during menstruation and its not infrequent enlargement during pregnancy.

While as yet we have no knowledge of a specific causative factor in the production of goiter, nevertheless a great deal has been learned during the past quarter of a century concerning the physiology and pathology of the gland. Among its several functions the thyroid has been shown to be a *defense gland* and that it has much to do with physical and mental development. It is evident that increased activity of the gland is required during infections in different organs of the body. Several observers, among them McCarrison, believe this demand to be occasioned by intestinal toxemia, and that this may play an important part is undoubtedly true. The work of various goiter commissions and the reports of those observers who have made a study of the etiology of goiter make it quite apparent that, whatever the agent, it seems to be more readily conveyed by water than by any other medium, although water is probably not the sole carrier. The so-called goitrogenous water, when boiled, is not infective. Evidence varies as regards intestinal toxemia. Boiled water contaminated with the feces of an individual having recently developed goiter has produced goiter in goats, while the filtered residue of goitrogenous water from districts in which goiters prevail has also produced the same result in man and the goat. This does not necessarily prove a specific agent; it may indicate a demand on the system for increased resistance and greater elimination of toxic material. Repeated tonsillitis is another disease in which an infection may have a bearing on the hyperactivity of the thyroid.

The thymus gland and the thyroid are undoubtedly intimately associated in the growth and development of early life. We now know that the thymus is much more regularly persistent throughout life than it was formerly supposed to be and that not infrequently the gland may be of great size in advanced middle age, compressing the trachea at or just above its bifurcation. Such a complication is more common and more grave in late goiters of the serious hyperplastic type.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

The occasional large goiter observed in the cretin has but little active parenchyma. If these goiters cause distress they should be removed. We have repeatedly transplanted gland from the mother, and also from fresh simple and exophthalmic goiter. In none of these cases did the transplanted gland functionate, though for a short time it furnished secretion by absorption.

Changes in the voice are often caused by the presence of goiter. Large right-sided goiters quite frequently produce paresis of the left recurrent laryngeal nerve. It is therefore advisable to make a laryngoscopic examination before doing a thyroidectomy, which otherwise may be blamed for the paresis discovered later. Loss of voice through injury of the recurrent laryngeal nerve during operation is not a rare occurrence. Possibly 10 per cent. of patients have some temporary hoarseness, and about 5 per cent. a permanent difficulty with one cord, but without loss of voice. This percentage is small compared with the number of cases of paresis or paralysis due to the pressure of a goiter.

The left recurrent nerve, which is more frequently affected, lies slightly deeper than the right and has received more stretching during embryonic life. This may account in some measure for its greater susceptibility to injury from pressure. Extensive exposure of the nerve, as is done in some clinics, is necessary only in an operator's early experience, or in operating on nodular thyroids which extend beneath the trachea and which may have displaced the nerve. The scar tissue resulting from the traumatism of a too free exposure of a nerve may lead to secondary paresis.

Intrathoracic goiters and deep substernal goiters are of serious import and are found about once in fifty operations for simple goiter. Slight substernal projections are much more frequent. The diagnosis rests on (1) dull area on percussion, (2) the roentgenograph, and (3) evidences of substernal pressure (dilated veins, obstructive dyspnea and palpation of the upper pole of the gland just above the clavicle).

A special histology of the parathyroid glands was described by Sandstrom in 1880, and they have been the subject of much investigation and experimentation from a surgical point of view during the past few years. While a great deal has been attributed erroneously to the parathyroids, they are worthy of serious consideration by the surgeon operating on the thyroid. There are four parathyroids in the human being normally and, since the veins of these bodies have no valves, they are quite liable to imperfect development through congestive conditions occurring during birth. Inasmuch as but one or two of them may be active and their injury during operation may cause tetany, their location must be avoided by preserving the posterior capsule, especially when both sides of the thyroid are operated on. Because of the difficulty in identifying the parathyroids, it is best also to preserve all small gland-like bodies beneath or connected with the posterior capsule. Treatment, however, of operative tetany with calcium lactate and also beeves' parathyroid with thyroid extract has been very effectual. Our experience with this disease and treatment is limited to one mild case of temporary duration.

As regards the non-surgical treatment of goiter, there is no question but that many cases of simple goiter, especially of the adolescent type, undergo a natural resolution, which is also true of congestions and enlargements occasionally observed during pregnancy. In the hyperemic goiters of adolescence some form of iodin treatment may have a favorable effect. In encapsulated adenomas the use of iodin may manifest a temporary favorable effect on the surrounding gland, but the effect on the encapsulated tissue is uncertain. Its use between the ages of 35 and 60 seems to stimulate the activity of the thyroid and to cause degenerative changes. More recent experience in the non-surgical treatment seems to indicate the use of thymol, salol and iodin as intestinal antiseptics. The administration of thyroid gland has rather an uncertain effect, yet apparently produces favorable results in the early treatment of simple goiters. In a considerable percentage of cases, hyperthyroidism unquestionably is checked at various stages of the disease by natural or therapeutic measures. In exophthalmic goiters temporary improvement has been obtained by the use of the Roentgen ray, which seems also to be of value in carrying serious cases through exacerbations. The cytolytic serums for specific action on the thyroid have not borne out in their results the early expectations of the medical profession.

In operating on the thyroid, the best exposure to be obtained is through a transverse incision low in the neck, the skin and platysma turned together each way from the incision. Should further exposure be necessary, the sternohyoid may be sectioned high in the exposed area to prevent movement of the cutaneous scar and preserve a working muscle. In simple goiters it is best to extirpate a greatly enlarged lobe. If both lobes are symmetrically enlarged, division of the isthmus with double resection of the gland is indicated for the best cosmetic results. Midline encapsulated adenomas should be enucleated with division of the isthmus. Lateral encapsulated adenomas may be enucleated or the whole lobe extirpated.

If symptoms of hyperthyroidism are present, extirpation is indicated. In severe cases of hyperthyroidism, in acute attacks and relapses or exacerbations, the condition should be considered medical until improvement takes place. If no improvement proves manifest under such care, injections of boiling water into the lobes (Porter) may give relief.

During the first three or four months of the symptoms extirpation can safely be made since the heart then is not dilated. If dilated to exceed 1 inch, primary ligation of the superior thyroid vessels is indicated, followed in four months by extirpation. After the first year a much smaller percentage of cases requires primary ligation. A single test ligation on one side may be made in doubtful cases, to be followed in a week by a second ligation or partial extirpation according to the degree of reaction.

The records of a large number of patients in this series show an average gain of 22 pounds within four months after ligation. These patients were then operated on, a partial thyroidectomy being done with safety. Following these methods of safety, we have performed 278 operations on cases of hyperthyroidism between deaths. Long-standing cases of simple goiter and adenoma may, by degeneration or chronic slow thyrotoxicosis, cause serious disturbances in the heart, kidneys and blood-vessels. Especially is this true of patients in middle and advanced middle life. When such complications are present operations are made with considerable risk.

Excluding malignancy, the mortality in operating on goiters is very low. It varies but little at present in the cases of so-called simple goiter, in which class are included occasional complications, from the cases of so-called exophthalmic goiter with hyperplastic glands. In the early development of surgery, operations on exophthalmic goiters were delayed until serious complications arose with the heart, kidneys or nervous system. This led to a high mortality, which naturally deterred physicians from sending patients to surgeons for early operation. The greater the delay the greater the mortality—hence a surgical vicious circle. Our mortality in the first sixteen cases (which were, of course, advanced) was 25 per cent.—about the average percentage in other clinics at that time. The mortality at present varies from 1 to 3 per cent. This great reduction in mortality is probably due less to operative skill and technic than to better judgment as to the time and extent of the operative procedure instituted, as well as to the skilled use and rational choice of an anesthetic. The various causes of mortality are hyperthyroidism, embolism, pneumonia, hemorrhage, sepsis, etc.

The results of operating on simple goiters are well known to be exceedingly satisfactory. Severe myxedema is but a rare complication following such operations, especially if the area of the gland nearest the capsule be preserved. The large colloid masses in the interior of these glands represent the great bulk of the tumor but the least amount of the working area of thyroid tissue.

Operation in cases of hyperthyroidism appears to give about 75 per cent. of cures, while the remaining 25 per cent. are more or less benefited, according to the degree of complication and the stage of the disease. Probably 10 per cent. have some degree of relapse in from one to three years after operation, usually manifested by the return of symptoms. In these rare cases further operation by ligating the vessels, and in most cases by removal of a portion of the remaining lobe, improves the condition of the patient by reducing the amount of thyroid secretion. Exophthalmos of marked degree and long standing may still be present when other symptoms are cured. This is due to the gradual contraction of the non-striated muscle which sustains the globe to the anterior supporting orbital fascia (Landstrom). In some cases we have greatly improved this condition by removing the superior and middle sympathetic ganglions.

If the patient is in a good general condition without complicating conditions, a general anesthetic, for instance, ether by the drop method, is preferred. Ordinarily patients receive 1/6 grain of morphin and 1/150 grain of atropin half an hour before the operation. Nervous patients having exophthalmic goiter may receive 1/200 grain of scopolamin one hour before operation, but without the atropin unless a general anesthetic is also to be given. Scopolamin is uncertain in its effects, some patients being made worse by its use. Patients suffering from grave complications rendering general anesthesia inadvisable can be carried through extensive operations by free local injections of novocain, 0.5 per cent.; and a combined local and general anesthesia, as advocated by Crile, may be of advantage in many cases. Intratracheal anesthesia is indicated in those cases of scabbard or distorted trachea in which the patient is already suffering from dyspnea, or more especially in those suffering from malignant disease of the thyroid, and complications due to enlarged thymus.

ABSTRACT OF DISCUSSION

Dr. George W. Crile, Cleveland: I can confirm Dr. Mayo's conclusions by my own experience, having operated in over 800 cases of goiter of all types and varieties. I have never seen a single case in which cancer of the thyroid diagnosticated before operation was cured by operation. I have seen a few cases in which cancer of the thyroid, not suspected before operation, but found by the pathologist, was cured. The safety of the operation for colloid goiter is so great at the present time that, if the patient demands operation, one is justified in removing the gland for cosmetic reasons. The care Dr. Mayo suggested in the preservation of the voice is excellent. I have found that one may take out the entire lobe, carrying the dissection right to the edge of the capsule, using very small hemostats, keeping a bloodless field so that one can see from the beginning to the end of the operation the lymph-vessels as they run out of the gland. In this way it would be impossible to remove either a parathyroid or to injure the recurrent laryngeal nerve. Passing to another subject, I wish that a commission might be appointed for the purpose of investigating the adolescent period of children living in goitrous districts. I believe that the syrup of ferrous iodid in 5-minim doses, three times daily, for periods of a month during every year, will control nearly all cases of simple hypertrophy. One of the factors in the production of adolescent goiter lies in the geologic change in the constituents of the earth where iron is not found in the food as once it was. I find that clinically one can make a very accurate prediction of the pathologic condition to be found in the gland. There is no more doubt in my mind as to the benefits of operation for exophthalmic goiter than of opening an abscess. Patients confirm that view, and our clinics have grown not through reference by physicians but through reference by patients. Nowadays, I believe that there is a general feeling not only among surgeons but also among patients that exophthalmic goiter is a disease that should not be allowed to go on until the stage of degeneration is reached. I believe that the late results of the disease are largely under control. One can operate now and control the hyperthyroidism by the principle of anoci-association, and not have a single change for the worse at the end of the operation, no matter how severe the case, how large the gland or how rapid the pulse-beat.

Dr. A. J. Ochsner, Chicago: The enlargement of the thyroid is primarily a physiologic condition. There seems to exist a certain balance between the amount of thyroid secretion and the amount of secretion that is needed by the human organism for the purpose of carrying on its physiologic work. The thyroid seems to work ahead and, when there is an unusual strain on the physiologic activity of the body, the thyroid seems to prepare for it. This occurs especially when there is to be produced a large amount of new tissue of a highly organized character, or of the bony framework, as for instance during pregnancy. There may be a physiologic increase in size of the thyroid or an increase in weight. The same may be true during the period of puberty. There is an increase in the size of the pelvic bones, and other changes in the anatomy of the girl are followed by an increase of the thyroid. We have another interesting example brought out by Professor Wilms, who found that the students coming to the university from hyperthyroid countries developed hyperthyroidism a short time after their arrival at the university. It seemed as if the thyroid had to produce an additional amount of secretion so as to make it possible for the person to get his growth under the handicap placed on him by the presence of certain substances in the water which he drank. When the young man goes to the university where the water does not contain these, where the thyroid must supply the substances and overcome this handicap, he develops hyperthyroidism. As soon as the boy goes home and drinks the water there, the hyperthyroidism promptly disappears. Some of the water from a town where 70 per cent. of all the inhabitants had goiter was given to rats. Every normal rat which drank this water for a period of weeks developed goiter. This water was boiled and given to other rats and did not produce enlargement of the thyroid. Something in the water had been changed. One of Wilm's assistants, who came from this town, gave water from across the valley to children there; these children did not have large thyroids. The children born on a certain farm did not have enlargement of the thyroid, but those who were born later into the same family, on a new farm, all had enlargement of the thyroid. The water was boiled and there was no more enlargement of the gland. Instead of giving iron or iodids, I would boil the water.

We must not lose sight of the physiologic side of this question. When the calamity has occurred, we must relieve the condition surgically before it has been destructive in its action, because, as Lundstrom demonstrated in the examination of all his cases, once the destruction has occurred, it is permanent.

DR. CHARLES H. MAYO, Rochester, Minn.: Dr. Crile called attention to a very valuable point, namely, that we have enough cases of goiter now all over the country to warrant the appointment of a goiter commission. In carrying on that work we ought to have the active cooperation of surgeons, internists, physiologic chemists and serologists, to see whether this question cannot be threshed out by having such a group of men at work on it, each one working on a series of cases, so that we could get something before this Section to guide us in our further work. Switzerland has had two or three such commissions, and the Indian government also has such a commission, which has already done an enormous amount of work. There is no doubt that goiter is toxic, but toxic as alcohol is toxic to the blood-vessels and to the heart. When a patient (usually a woman) has suffered for twenty or thirty years from colloid goiter, she begins to think about the goiter. She consults a physician and he starts to treat her with iodin, and in six weeks or three months she thinks that the goiter is smaller, but the doctor will change his indication for treatment from goiter to myocarditis or endocarditis. That can be done by treatment in overstimulating the gland which for twenty or more years could not give the necessary secretion. Nature has fortunately endowed us with enough glands so that we can spare a few. Take out one kidney or even half of the remaining kidney and still half a kidney will do the work. We can get along with one tenth of a pancreas, but that does not mean that we have too much kidney substance or too much pancreas substance. It simply means that Nature can accommodate herself to a certain extent so that a part of a gland can do the work of a whole gland. Take the high-school girl who is overworked, whose general condition is bad from overexcitement. She is very nervous; she receives a sudden shock. She has been struggling with an oversecretion of the gland, trying to neutralize certain poisons, and following the shock she develops in a few weeks a severe grade of exophthalmic goiter. Due to what? To overthrow or upsetting of the balance which had existed and which prevented any untoward effect on the sympathetic nervous system. It did not come on suddenly. It suddenly became acute. That is all. It had been there for a long time. It made her nervous and the shock made it acute.

LANGE'S COLLOIDAL GOLD CHLORID TEST ON THE CEREBROSPINAL FLUID IN CONGENITAL SYPHILIS [*]

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Anyone who has had much experience with the Wassermann reaction and other laboratory tests as applied to the diagnosis of congenital syphilis must feel that such reactions are entirely inadequate, and this especially applies to those cases in which they are most needed, that is, in very young infants.

Zsigmondy[1] has shown that certain albuminous bodies when brought in contact with a solution of colloidal gold in the presence of an electrolyte, would, in certain concentrations, cause a clumping together of the small colloidal particles producing various changes in color and even precipitation. He also found that when these albuminous substances were in less dilute solutions they possessed a protecting power which prevented precipitation. Furthermore, it was noted that the point at which protection ceased and precipitation began was different for each albumin. Lange, therefore, concluded to try the effect of spinal fluids on colloidal gold solutions.

Very shortly Lange found that when he used a certain amount of cerebrospinal fluid from a patient with general paresis, in the presence of 0.4 per cent. sodium chlorid and added the colloidal gold solution he got a certain change of color. He tried this again with spinal fluid from a similar case and got the same kind of a reaction. These tests were repeated always with the same result.

Tabetic spinal fluid was then tried with a resulting reaction approaching somewhat that of general paresis cases. Continuing in this way he found that all cerebrospinal syphilis cases reacted in about the same dilutions; and that those cases not due to syphilis either gave no reaction at all or reacted at different dilutions. He was thus, by the gold test alone, able to differentiate the luetic cases from those due to other diseases.

As Lange's experiments and studies continued he found that general paresis had an absolutely typical reaction; that, knowing nothing about the history of the case, one could say, from the gold test alone, whether or not the fluid in question was from a case of general paresis. The reaction for tabes, although quite characteristic, is not pathognomonic. One can, however, say that it is undoubtedly syphilis. Syphilitic meningitis gives a definite reaction for syphilis. On the other hand, Lange found that tuberculous meningitis, suppurating meningitis and other forms of meningeal inflammations, whenever the spinal fluid gave a positive Nonne (ammonium sulphate test), would give a positive gold reaction, lower down the scale of dilutions.

It can now be seen that Lange found something in the gold test which was much finer than anything in the tests heretofore in use. The Nonne simply told him that he had a pathologic fluid. With the gold test he could in some cases diagnose, and in all cases he could say with a high degree of certainty whether or not the case was one of syphilis.

Lange himself is extremely conservative and, in order to make a definite diagnosis, he still advises the use of the clinical history, the Wassermann, cell-count, and the Nonne in addition to the colloidal gold-precipitation test.

Materials Needed for the Test.—
1 per cent. solution of gold chlorid (Merck's Yellow Crystals).
2 per cent. solution of potassium carbonate.
1 per cent. dilution of liquor formaldehydi.
10 per cent. solution of sodium chlorid.
Jena glass beaker, 1,000 to 1,500 c.c.

It is of the greatest importance that one have a good indicator with which to work in order to get accurate results with Lange's gold test. In order to make up such an indicator the following technic should be followed out in the minutest detail:

1. All glassware used must first be cleaned with acid, then washed in distilled water and dried with heat. Pipets may be dried out with alcohol and ether.

2. To make 500 c.c. of indicator (*a*) take 500 c.c. of freshly double distilled water in a Jena glass beaker (1,000 to 1,500 c.c.), and heat slowly over wire gauze; (*b*) when the water is approximately 60 C., add, while still heating, 5 c.c. of 1 per cent. solution of gold chlorid and then follow *immediately* with 5 c.c. of 2 per cent. solution of potassium carbonate; (*c*) heat rapidly to boiling; (*d*) turn out flame as soon as first steam bub-

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[*] From the Laboratory of the Presbyterian Hospital, Chicago.
[1] Zsigmondy: Ztschr. f. Chemotherapie, 1912, i, 44.

TABLE 1.—CASES CLINICALLY CONGENITAL SYPHILIS*

Name	Age	Gold Chlorid Reaction 1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	Nonne	Wasser-mann-Noguchi
Helen W.	6 weeks	+++	+++	+++	+++	+++	±	0	0	0	0	+	—
Anna K.	6 weeks	++	+++	++	++	±	0	0	0	0	0	±	..
Anna K.	13 weeks	0	0	0	0	0	0	0	0	0	0	..	..
Baby M.	4½ months	++	+++	++	++	±	0	0	0	0	0	..	+
Harold G.	3 weeks	++	++	++	++	+	±	0	0	0	0	+	—
Armando M.	1 year	++	+++	+++	+++	+	0	0	0	0	0	..	..
Baby C.	6 months	+++	++++	+++++	++++	++	+	0	0	0	0	+	..
Ruth S.	6½ months	+—	++	+++	+++	+	0	0	0	0	0	±	+
Ger. R.	10 months	+	++	+++—	+++—	+	±	0	0	0	0	±	..
Baby E.	4 years	++	+++	+++++	++++	+	0	0	0	0	0	+	—

*The single plus mark (+) indicates red and red-blue; ++, red-blue and blue-red; +++, violet and dark blue; ++++, light blue; +++++, clear.

TABLE 2.—CASES OF SUSPECTED CONGENITAL SYPHILIS

Name	Age	Diagnosis	Gold Chlorid Reaction 1/10	1/20	1/40	1/80	1/60	1/320	1/640	1/1280	1/2560	1/5120	Nonne	Wasser-mann-Noguchi
Gladys	2¾ years	Susp. Cong. Syph. Pyelocystitis, Anemia.	++	++	+++	++	+	0	0	0	0	0	±	..
Forrest S.	9 mos.	Susp. Cong. Syph. Anemia.	±	±	+	±	0	0	0	0	0	0	±	..
Irene N.	3 mos.	Susp. Cong. Syph.	+	++	+++	+++	+	0	0	0	0	0	+	+
Wyd. St.	2 yrs.	Susp. Cong. Syph.	++	+++	+++++	++++	+	0	0	0	0	0	±	+
Helen C.	6 weeks	Susp. Cong. Syph.	+	++	++++—	+++++	++++—	+	0	0	0	0	±	—
Mart B.	3 yrs.*	Susp. Cong. Syph.	+++	+++++	+++++	+++++	++	±	0	0	0	0	..	+
Eya K.	7 mos.	Susp. Cong. Syph.	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	++++	++++	..

*Valvular heart disease.

TABLE 3.—NON-SYPHILITIC CASES

Name	Age	Diagnosis	1/10	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	Nonne
Wyman E.	5 years	Anterior poliomyelitis	+	+	+	++	++	+++	++++	+++—	+	0	++++
Angelo S.	3 months	Coryza	0	0	0	0	0	0	0	0	0	0	0
Sarah R.	3 months	Septic meningitis	+	+	+	+	+++	++++	++++	+++	+	+	+++
Harold B.	3 years	Tubercular meningitis	++	++	+++	++++	+++++	+++	±	0	0	0	++
Edwin B.	21 months	Pneumo meningismus	+	++	++++	+++	++	0	0	0	0	0	±
Dale H.	7 years	Pneumo meningismus	±	+	++	+	0	0	0	0	0	0	..
Blanche G.	3 years	Tubercular meningitis	+++	+++	+++	++++	+++++	+++++	+—	0	0	0	++
Rosa R.	18 months	Pneumo otitis media	0	0	0	0	0	0	0	0	0	0	0

bles appear, and (*c*) add *quickly* 5 c.c. of 1 per cent. dilution of liquor formaldehydi; and immediately begin vigorously shaking the beaker until a change in color occurs, which takes from one half to three minutes.

The change that should occur is first a gradual darkening of the fluid with the appearance of a bluish tint, then a dark blue changing to a purple and finally a red. The final solution, if good, should be a red with just a tinge of yellow, and a very faint shade of purple. This is an absolutely clear solution, and, if kept in a clean glass container, will keep almost indefinitely. Occasionally a deposit will be noticed on the sides of the beaker. It must further be noted that one cannot always get an absolutely clear solution. Solutions that are only slightly turbid by reflected light may be used but not for fine tests. Fluids that are purplish and murky should not be used.

The water must be distilled over glass or silver, otherwise one will be unable to make up a good indicator. Ordinary corks, *not rubber*, may be used in connecting up the distilling apparatus.

Having made up the indicator, the colloidal gold solution—and this is the delicate part of the test—place in a test-tube rack a series of ten test-tubes. In the first tube place with a pipet 1.8 c.c. and in each of the succeeding nine tubes 1 c.c. of 0.4 per cent. sodium chlorid made up fresh from a stock 10 per cent. solution. To the first tube now add 0.2 c.c. of spinal fluid free from blood and alkali. This makes a dilution of 1:10. Having mixed this thoroughly with a 1 c.c. pipet, remove 1 c.c. and deposit it in the second tube, thus making a dilution of 1 to 20. Repeat this throughout the series of ten tubes. Throw away the last cubic centimeter. The dilutions then are 1:10, 1:20, 1:40, 1:80, etc. up to 1:5000. Having made the dilutions, then add to each tube 5 c.c. of the indicator and let the tubes stand for twenty-four hours before reading the results.

For this series of cases the technic of lumbar puncture is as follows: The needles are boiled in water, then cleansed in alcohol and finally with ether. The skin of the infant is cleansed with tincture of iodin and then with alcohol. All fluids are rejected which contain blood.

The accompanying tables contain reports on 9 cases which were clinically congenital syphilis (Table 1), many of which responded to specific treatment, though some of the patients died. Careful attention to these tables will show that the most marked reactions occurred in dilutions of 1:40 and 1:80; that in certain instances the reactions extended into the weaker dilutions, but this was not characteristic, and in every instance the most marked reaction occurred in the dilutions given above.

In the cases of suspected congenital syphilis (Table 2), with two exceptions, the reaction was the same. These two exceptions consisted, first, of a case of crossbun head (a head showing cross furrow in the interparietal and lambdoid sutures), with severe anemia which showed a very slight reaction and that in dilution of 1:40. The other was a case of strongly suspected congenital syphilis which occurred in a child 7 months old. This child died two days after the removal of the cerebrospinal fluid from which this test was made. This fluid gave the reaction which is regarded as typical for general paresis. In all the tubes at all the dilutions we tried, that is, from 1:10 up to 1:5000, there was a marked precipitation of the colloidal gold.

Interesting to note in the first series of cases is that of Anna K. who at six weeks, when a positive congenital syphilis was present clinically, gave the distinct gold chlorid reaction; at thirteen weeks, after continuous treatment, the cerebrospinal fluid was negative throughout.

Of the non-syphilitic cases here reported (Table 3), two gave no reaction. One was in a child 3 months of age with a very severe coryza; and the other in a child who had pneumonia and otitis media together with a streptococcus sore throat. Two very interesting cases are those of Edwin B., aged 21 months, and Dale H., aged 7 years, each of whom had a meningismus complicating a pneumonia. In one of these cases, Edwin B., reaction in the cerebrospinal fluid very closely approached that of congenital syphilis, while in the other the reaction, though very slight, had its greatest intensity at dilutions of 1:40. The two cases of tuberculous meningitis could not be mistaken because the greatest intensity of their reaction occurred in dilutions of 1:80, 1:160, and 1:320.

The case of anterior poliomyelitis and that of septic meningitis (influenzal (?)) show the most marked reaction in higher dilutions.

Many of these cases of congenital syphilis were confirmed by the Wassermann reaction on the cerebrospinal fluid, but in most cases it was impossible to obtain large enough amounts of the cerebrospinal fluid so that a negative Wassermann could be regarded as of no value in excluding syphilis.

While from such a small series of cases one cannot show that the gold chlorid test gives specific reactions in cases of congenital syphilis, one would seem justified in making the statement that the reaction here shown was very suggestive and might prove to be of much more value in the diagnosis of congenital syphilis than any laboratory reactions previously projected. One must not lose sight of the fact, however, that laboratory tests of the nature of the gold chlorid reaction must always be regarded only as an aid to clinical diagnosis.

From the cases here reported it would seem strongly suggestive that a case showing clinical signs of congenital syphilis could be confirmed by the reaction here noted of the cerebrospinal fluid to the colloidal gold solution of Lange. It is possible that treatment will distinctly modify this reaction but to a much less degree than it would the Wassermann reaction.[2]

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EXPOSURE OF THE BRACHIAL PLEXUS WITH NERVE-TRANSPLANTATION *

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Patient.—John P., white, single, aged 30, Polish laborer, was examined Oct. 30, 1912; family and past history were negative. He got into a brawl, Sept. 21, 1912, and received a stab-wound at the base of the neck, above the left clavicle. He was taken to a near-by hospital, and the wound, together with another slight stab-wound of the back, was closed with sutures. Immediately following the injury he had complete motor and partial sensory paralysis of the left arm. He was kept at the hospital for one month, was told that he might require further operation, and then transferred to the city farm, whence he was admitted to the state infirmary. According to patient's statement there was still an area of anesthesia over the arm and shoulder, the strength of his hand was coming back, but he had complete paralysis of the left arm.

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[2] This work was a corollary of the work done by Dr. Sippy and Dr. Moody in examination of the fluid from cases of paretic dementia and tabes which article appears under the title, The Colloidal Gold Reaction in the Diagnosis of Syphilitic and other Lesions of the [illegible] Nervous System, Presentation of the Vario[illegible] of Cases, Transactions of the American [illegible] 1913.

* Read before the North Middlesex Medical Society of Lowell, April 30, 1913.

Physical Examination.—At the posterior border of the left sternocleidomastoid muscle, 1½ inches above the clavicle, is a healed stab-wound ¾ inch in length, extending diagonally from below upward. There is complete paralysis of the deltoid, biceps, brachialis anticus, supraspinatus, infraspinatus, teres minor, supinator longus, and supinator brevis muscles, causing loss of abduction of the arm, and flexion and supination of the forearm, and an area of anesthesia of the shoulder-cap and upper third of the arm. The patient can raise his shoulder only by shrugging.

Diagnosis.—We are evidently dealing with a section of the fifth and sixth cervical nerves between the posterior thoracic nerve, supplying the serratus magnus muscle, and the suprascapular nerve. The section may be through the fifth and sixth nerves just inside where they join to form the upper trunk, or it may be through the upper trunk itself.

The patient was observed for one week without the least sign of improvement, and operation was advised.

Operation.—Nov. 8, 1912.—At patient's request ether was administered. Incision was made from one inch below the mastoid, parallel with the posterior border of the sternocleidomastoid muscle, downward over the clavicle. The posterior triangle of the neck was fully exposed, the posterior belly of the omohyoid muscle retracted downward, and the brachial plexus exposed. The fifth and sixth cervical nerves were found to be completely severed just above the upper trunk. The approximal ends of the severed nerves had retracted to the spinal column. The distal end showed a fibrous degeneration for three-quarters of an inch. On account of the retraction and the degeneration it was impossible to unite the cut ends directly, or by a neuroplastic operation. The distance from the spinal accessory to the distal end of the upper trunk below the degeneration was so great that it would put a large amount of tension on the nerve sutures, if such a procedure were attempted. The distal end of the upper trunk was split longitudinally for about one-half inch below the degeneration, and the anterior terminal branch of the fourth cervical nerve was severed and implanted into the split upper trunk, and sutured with Pagenstecher linen. The deep fascia was closed with continuous plain catgut and the skin was closed with interrupted silkworm gut. One small cigarette drain was left in the lower angle of the wound, and a dry sterile dressing applied.

Postoperative History.—Nov. 10, 1912: Drainage taken out; wound clean.

Nov. 17, 1912: Stitches out. First intention healing shown.

Nov. 30, 1912: Pronation and supination of forearm returning. Hand-grasp much stronger.

Dec. 3, 1912: Patient beginning to flex his forearm. "Pins and needles" sensation down the arm. Sensation returning over upper arm and shoulder.

Dec. 26, 1912: Patient receiving faradic current to muscles of arm and forearm biweekly. Area of anesthesia over shoulder-cap decreasing, flexion of forearm stronger, and beginning abduction of the arm.

Jan. 25, 1913: Improvement has been slow, but steady. Patient says he can feel that he is growing stronger every day. He is still receiving faradic current biweekly, and strychnin, one-fifteenth grain, hypodermically, daily.

March 23, 1913: Patient has asked for his discharge as he has been working for the past month in the institution blacksmith-shop and finds that he can do a little more, and is a little stronger in his left arm every day. Physical examination on discharge shows atrophy of the deltoid muscle, with loosening of the shoulder-joint ligaments, and joint-crepitus. There is atrophy of the biceps, but not so marked as of the deltoid. There is no area of complete anesthesia now, although over the shoulder-cap the patient says he feels a pin-point sensation deep in, rather than on the skin surface. Grasp of the left hand is strong and supination and pronation are good. Flexion of the forearm with the hand supinated is hard, but has come within the last few days. Patient says that he lays his arm flat on the bed before getting up in the morning, and flexes the forearm four times. He further flexes his forearm by a motion combined with adduction across his chest, and this is fairly strong. There is slight abduction, about ten or twelve inches from the side.

AFTER-HISTORY AND COMMENT

Incised and puncture wounds of the brachial plexus are rather uncommon, and are usually caused by stab- or bullet wounds. The histologic changes taking place in the distal portion of the divided nerve are swelling of the nuclei of the nerve-cells, irregular beading of the myelin, with final separation of the myelin transversely. Faradic muscular contractions are lost in a few days. This degeneration may be rapid in some cases, or more gradual in others. The symptoms following section of spinal nerves are loss of motion, sensation, muscle reflexes and, later trophic changes in joints, muscles, skin, and its appendages.

In this case we found marked retraction of the approximal end, with a fibrous-appearing degeneration of the distal end of three-fourths of an inch, and the time intervening between the date of injury and the date of operation was only forty-eight days.

TREATMENT OF NERVE-SECTION

The treatment of nerve-section is always nerve-suture. This may be primary or secondary. In selecting the time for secondary suture, much must depend on the signs of regeneration we get following the injury. Horsley advises waiting for eighteen months. If, after a moderate length of time, we see no improvement, or the improvement due to other nerve fibers taking the place of the severed nerve has reached its limit, we are justified in exploring to learn the condition. At operation we have several methods open to use. We can suture the cut nerve end-to-end, if the operation is undertaken immediately following the injury. If this is made impossible by retraction and degeneration, we can lengthen the cut nerve-ends by a neuroplastic operation. We can resort to a nerve anastomosis or a nerve transplantation.

In this particular case, end-to-end suture was impossible on account of retraction and degeneration, as was a neuroplastic operation, it being impossible to get hold of the approximal end, owing to the retraction. Anastomosis with the spinal accessory could not have been accomplished without considerable tension being put on the sutures, with the danger of having the sutured ends become separated. The only method left was the transplanting of an end branch of the spinal nerve directly above into the distal end of the cut nerve below the area of degeneration. This was done without causing undue tension, and trusting that our transplanted nerve contained both motor and sensory fibers.

PROGNOSIS

In the matter of prognosis we must not promise or expect too much. Much depends on whether or not we have any suppuration present with the consequent formation of scar tissue. In the most favorable cases, referring especially to those in which secondary suture is done, we rarely see complete restoration of function. Following operation we may have to wait some time for an encouraging sign that we are going to be partially successful. In this case, returning strength in supinating and pronating the forearm, and stronger hand-grasp were noticed by the patient within twenty-two days.

This may have been partially due to the removal of pressure from scar tissue at the time of operation. In twenty-five days the patient noticed the "pins and needles" sensations extending down the arm; and returning sensation over the area previously void of sensation. With this soon followed the muscle response to the faradic current where previously none could be elicited. From this point strength gradually returned to the paralyzed muscles, very slow to be sure, but to that extent that the patient noticed that he was a little stronger each day, and that he could accomplish things that were previously impossible. At the time of his discharge, the comparison was that of a man who at the time of his admission, could move his left arm only by swinging his body, with a man who, in 133 days following operation, was able to work in a blacksmith shop, and use his arm very handily. He was told that improvement would probably continue to a considerable extent, but that the deltoid muscle would always function but poorly, and the biceps never to its full previous use.

SUMMARY

The case forcibly illustrates two points: first, the mistake in closing the skin wound at the time of injury without exploring fully the extent of the damage, with immediate nerve-suture, a neglect which may be compared with the suturing of incised wounds of the wrist and leaving the cut tendons disunited; second, the results we may get in cases that seem almost hopeless, and the fact that even a long chance is worth taking.

THE TREATMENT OF PROFUSE KIDNEY HEMORRHAGE BY MEANS OF EPINEPHRIN

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The rather remarkable results obtained in treating the following case of profuse, painless hematuria by means of injections of epinephrin directly into the pelvis of the kidney through the ureteral catheter seem worthy of report.

REPORT OF CASE

History.—At the age of 15 the patient was very much run down and delicate. At that time she had some frequency of urination accompanied with burning pain. There was no history of traumatism. The patient's only complaint was the presence of blood in the urine. There never had been any urinary symptoms. For the past four months she was obliged at times to arise once at night to void. Seventeen years ago, during her first pregnancy, the patient had her initial onset of hematuria. This occurred during the sixth month of the pregnancy. At this time the hematuria was intermittent, lasting only a few days or a week. The hematuria disappeared with the termination of the pregnancy. The second attack of hematuria appeared with her second pregnancy. At this time it was first noticed during the second month, and it was irregular as with the first pregnancy. After her confinement she felt perfectly well and the urine remained clear. During her third pregnancy she was relatively free from hematuria, having only an occasional attack, very mild in character. With the fourth pregnancy, the hematuria started at the beginning of the pregnancy and continued until life was felt. There was no more hematuria after this until the fifth pregnancy, when the attack was very mild. After the sixth pregnancy she was perfectly well until June, 1911, when she again had hematuria. This continued daily until February, 1912. From that time to July, 1912, she was well and the urine was free from blood. Her last attack came on in July, 1912, and hematuria has been constantly present ever since. Since the hematuria began she has been free from headaches, of which she complained prior to its onset. In September, 1912, the patient had some pain in the left lower quadrant of the abdomen. The pain started after urination and was so severe that she was obliged to call a physician.

Examination.—Temperature was 98.6 F., pulse not recorded. Blood-pressure was 128 mm., and hemoglobin 50 per cent. The heart, lungs and abdomen were negative. The patient had a very marked anemia. Cystoscopy revealed the bladder and ureteral orifices negative. A double ureteral catheterization was done. The catheters entered the ureteral orifices and passed into the pelves of the kidneys without any obstruction. The urine from the right ureter was clear, contained a few red blood-cells, albumin, no sugar and no casts. The urine from the left ureter contained practically pure blood. Examination of the urine for tubercle bacilli was negative. The Roentgen-ray examination was negative.

Treatment and Course.—Because of the patient's bad general condition and the further fact that she refused to consider any eventual surgical measures, it was decided, if possible, to stop or control the hemorrhage by injecting into the pelvis of the left kidney through the ureteral catheter epinephrin (adrenalin, P. D. & Co.) solution. Five c.c. of a solution consisting of 50 per cent. epinephrin and 50 per cent. salt solution were injected into the pelvis of the left kidney, and the patient was put to bed. The next day the amount of blood in the urine had materially diminished. Three days later the left ureter was again catheterized, and 5 c.c. of 50 per cent. epinephrin in salt solution were injected as before. Following this injection there was a marked diminution in the amount of blood in the urine, as compared with the specimens obtained through the ureter catheter and the voided specimens obtained before the treatment was instituted. Four days later there was still some blood in the urine. Cystoscopy was again done and another injection of epinephrin solution of the same strength was given. The next day the urine was perfectly clear to the naked eye. The centrifugalized specimens obtained for the next three or four days showed the presence of only an occasional red blood-cell. No casts were found.

COMMENT AND CONCLUSIONS

The occurrence of blood of renal origin showing in the urine during pregnancy has been reported at various times. Most of these cases show inflammatory changes in the kidney. Occasionally one reads in the literature reports in which patients of this class have been subjected to a removal of the kidney because of the hematuria. Not only in the cases following pregnancy is nephrectomy resorted to, but in other cases in which the hemorrhage becomes profuse with no apparent clinical cause for the hematuria.

The simplicity of the treatment with epinephrin injections is at once apparent and its advantages may be said to be the following:

1. If by this simple procedure we are able to control the renal bleeding, the condition of the patient's urine may be studied at a time when it is free from large quantities of blood.

2. In cases in which there is a severe degree of secondary anemia, due to the loss of large quantities of blood, the patient may be put on a general tonic treatment besides the epinephrin treatment, until such improvement is reached as will render operation a safe procedure.

3. It may be the means of avoiding nephrectomy.

It is not to be inferred that epinephrin is to be considered a specific in every case of renal hemorrhage, as we know that many of these cases are due to tumor, tuberculosis and stone. Obviously to treat in this manner cases due to the causes just mentioned would be a mistake, but the treatment might be employed temporarily, at least until a positive diagnosis of the cause of the bleeding can be made.

A somewhat analogous case has been previously reported by Young of Baltimore.[1]

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PURPURA, URTICARIA AND ANGIONEUROTIC EDEMA OF THE HANDS AND FEET IN A NURSING BABY

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I wish to report a rare type of purpura and urticaria associated with angioneurotic edema of the hands and feet and other regions.

The patient was a boy, aged 6 months, strong and fat, nursed by a healthy mother.

First day: On December 14 a dark, brawny swelling appeared, first in the left foot and then in the right foot. The child seemed ill and cried from pain in his feet. A few hours later a dark red edema involved the scrotum, and an erythema developed on the thighs and buttocks. The baby was given two doses of castor oil, 15 c.c. each, also an enema which caused a normal stool.

Second day: In addition to the edema of the feet and genitals both eyes were closed by an effusion into the lids. The child was in continual misery from the tender ankles and refused to nurse. Fifteen c.c. of castor oil produced three light-colored stools containing mucus and a minute reddish flake, possibly blood.

Third day: Rectal temperature was 100.5; abdomen, heart and lungs normal. The puffiness in the eyelids had lessened. Both ears were swollen with a dark red erythema. There was an ecchymosis the size of a half dollar in each cheek. The scrotum was almost of a normal size and color. On the back, buttocks and posterior portion of the thigh were numerous dark infiltrated hemorrhagic areas the size of a quarter of a dollar. Both legs were thickly sprinkled with large red papules about 3 mm. in diameter; these evidently itched. Both feet and ankles were greatly swollen and very painful. Here the skin was of a normal color. No abdominal pain or tenderness could be elicited. The urine was scanty and could not be procured.

Fourth day: The baby refused the breast and was in great distress, unless quieted with heroin. The edema in the eyelids and ears was hardly noticeable. As a result of a pin-scratch a broad, dark ecchymosis 7.5 cm. by 0.5 cm. had appeared on the anterior surface of the right thigh. The purpura of the cheeks, back, buttocks and thighs was unchanged. More papules had developed on the legs. Feet and ankles showed no change. Both hands had commenced to swell, the right first.

Fifth day: Baby was asleep from heroin. The most prominent symptom was an enormous swelling of both hands and wrists which had increased so rapidly that the wristbands of the sleeves had to be cut off, leaving a livid constriction in the flesh. All joints in the fingers, hands and wrists were freely movable, but manipulation seemed very distressing. The swelling of the right hand was hard and dark; the color did not change on pressure. In the left hand the edema was equally firm but of a lighter red, which disappeared on pressure. Both legs were covered with urticarial wheals, some of which quickly become hemorrhagic. Mixed with the wheals, but fewer in number, were small petechiae.

Seventh day: The brawny swelling of the hands lasted two days and disappeared. There was no pain in moving either hands or feet. the purpura of the cheeks, back and buttocks was fading; there were new hemorrhagic papules on the legs. The baby was obstinately constipated, probably from opium. It would nurse only after the bowels had moved; there were four laxative stools, large and foul-smelling; there was no blood in them.

Tenth day: Baby very comfortable; sleeping and nursing well; defecation and urination in order. The only relics of the illness were faint stains on the site of the old hemorrhages and a fine papular skin infiltration on the legs.

The child's general condition has remained good, and there has been no recurrence of the skin lesions.

This illness ran its course without fever; no urinary or blood examination could be made. It is practically certain that no serious hemorrhagic nephritis was present as the diapers were not stained by the urine.

SUMMARY

The patient, a fat baby thriving on its mother's milk, was suddenly attacked by purpura, urticaria and localized edema, lasting about ten days. There were only systemic symptoms from the result of pain. At first the bowels were obstinately constipated, possibly from an edema of the intestinal walls sufficient to inhibit peristalsis, but not of enough intensity to cause colic or hemorrhages as is observed in Henoch's purpura.

The skin lesions were (1) an angioneurotic edema of the scrotum, both ears, eyelids, hands and feet; these regions were also discolored by a hyperemia which in the right hand became a brawny hemorrhagic infiltration; (2) numerous papules on the legs; (3) subcutaneous hemorrhages in the cheek, back, buttocks and thighs; (4) the tendency to capillary oozing in the skin, which was so great that a slight pin-scratch caused a long ecchymosis.

The joint symptoms should not be dignified by the title of arthritis; there was a rapid serous effusion into the skin, subcutaneous tissues and peri-articular and articular surfaces of the hands and feet.

The swelling of the feet came first, lasting six days. On the fourth day of the illness both hands were involved. Here the edema remained for three days and was almost hemorrhagic in type. The scrotum, ears, and eyelids were the seat of a transitory edema. Purpura appeared in the face, back and thighs. An urticaria covered both legs.

It should be noted that except in the genitals the skin and joint lesions were symmetrical. All of the symptoms probably belonged to the erythematous group described by Osler, a hemorrhagic type of an exudative diathesis; namely, a vascular dilatation and exudation due to disturbance of vascular tonus producing hyperemia and serous and hemorrhagic effusions.

In a general angioneurotic disturbance there is an abnormal tendency of the skin, subcutaneous, mucous and articular tissue to react to varied systemic irritants. This toxic influence plays over the peripheral surfaces, producing in some regions localized edemas, on others, urticaria and hemorrhages.

I do not consider the various types of purpura, namely, purpuric arthritis and Henoch's purpura, as distinct pathologic entities. In one region the same toxin may produce an ecchymosis, in another colic and gastro-intestinal hemorrhage, in a third a swollen joint.

The case is reported in full detail not because it is unique, but for the reason that it is a clear-cut example of a purpura and angioneurotic arthritic edema, developing in a young, healthy baby. It is also true that such symptoms might excite unnecessary alarm and false conclusions, were not the short, benign course of the malady well known.

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[1] Young, Hugh H.: Cure of Renal Hematuria by Injection of Epinephrin (Adrenalin) Through Ureter Catheter, THE JOURNAL A. M. A., May 18, 1907, p. 1654.

Numerous medical treatises of which the best is by Pratt, in Osler's Modern Medicine, describe purpura and allied conditions and give illustrative cases, all of which show individuality, and none of which are precisely similar in distribution or character of lesion.

The usual nomenclature and classification of the disease is faulty and leads the enquirer into dire confusion. Nothing definite is known of the etiology. Some authorities claim bacterial infection; others ascribe the symptoms to systemic intoxications of undiscovered origin. Both causes may undoubtedly produce the same lesion. The purpura of a drug rash or scurvy may resemble those of measles or small-pox.

Why a healthy, breast-fed baby should develop purpura, urticaria and swollen joints and recover so quickly, I am unable to explain. It had no fever or digestive disturbance and the function of the kidneys was not disturbed. These facts are against the theory of infection or intoxication.

In this connection a short allusion may be made to Henoch's purpura, in which the purpura is associated with gastro-intestinal crises, acute abdominal pain, vomiting of blood and intestinal hemorrhages. There may be also abdominal tenderness and such obstinate constipation that an intestinal obstruction is suspected, or in a baby the colic, vomiting and bloody stools may simulate the clinical picture of an intussusception.

With these symptoms the experienced clinician might consider operative treatment, but he should also recall the visceral symptoms of the exudative diathesis and look for ecchymosis and localized edemas and a hemorrhagic nephritis. The intestinal symptoms may be caused by an edema of the gastro-enteric mucosa.

Henoch's purpura has a certain surgical importance, for several patients have been operated on for intestinal obstruction and the procedure has done the patient little good. The diagnosis is sometimes made easier by a history of previous attacks, for the condition often recurs. If Henoch's purpura is correctly diagnosed and the patient left alone a prompt recovery is the rule.

ILLUSTRATIVE PERSONAL CASE OF HENOCH'S PURPURA

A girl 2 years old was attacked with an urticarial rash on the flexor surfaces of the thighs. The urticaria was quickly followed by large ecchymoses mixed with petechiae appearing on the chest, abdomen and back.

The purpura faded and was succeeded by a livid swelling of both ears and the right eyelid. About the eighth day of the illness the child commenced to vomit blood and pass two or three bloody mucous stools a day. The gastro-enteric symptoms continued three or four days and ceased abruptly.

During the illness the child was apathetic and somnolent; there was no fever, hematuria or abdominal tenderness.

The child made a complete recovery.

This case differed from Henoch's description, there being no abdominal pain. It is evident that a large number of cases of purpura will show a wide variation in symptoms.

476 Franklin Street.

Medical Frauds and Fakers in Michigan.—We doubt that there is a state in the Union so thoroughly infested and infected with medical frauds and medical fakers as is Michigan. For five years the question has been persistently asked, "What is the matter with Michigan?" The answer to this question must be either that the people of Michigan are the most gullible, most willing to be defrauded, or that our Michigan laws are the most tolerant in the United States. While observation proves that we are, as a people, "easy," so to speak, we believe that the great fault is in the absence of laws to restrain these worse than thieves, medical frauds and liars.—*Pub. Health Bull., Michigan.*

THE COCK'S-COMB TEST FOR THE ACTIVITY OF ERGOT PREPARATIONS *

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There can be no question as to the value of biologic tests provided we know for what we are testing; thus, in the case of adrenal glands, in which at least one active principle is known, we can say that preparations of this gland have a blood-pressure-raising activity corresponding to a definite amount of epinephrin. As a rule, the depressor principle[1] in these preparations is believed to be negligible, so that we speak of them as containing so much of the pressor compound, and do not consider their action as a resultant of these two factors. Elliott[2] has asserted that by using a biologic method for testing epinephrin solutions he can assay them to within .01 mg. of their correct strength.

In the case of preparations of ergot and of digitalis the question is much more complicated, as these drugs are believed to owe their activity to several constituents, which vary in activity. From ergot, Barger, Carr and Dale, simultaneously with Kraft, have isolated two alkaloids, ergotinin and ergotoxin. The first was found to be physiologically inactive,[3] while the second exerted all the characteristic actions of ergot, that is, solutions of this alkaloid would cause uterine contractions, a rise in blood-pressure and bluing of the cock's comb.

Kraft claimed that while his hydro-ergotinin, afterward found to be identical with ergotoxin, would blue the cock's comb, it failed to produce uterine contractions, save when used in toxic doses, so that according to him the activity of ergot in causing uterine contractions could not be traced to this body.[4] This conclusion was presumably due to the fact that his preparations were tested on a different species of animal from those on which Dale tested ergotoxin. The total amount of alkaloids obtained from ergot is said to vary from 0.05 to 0.2 per cent.[5]

Barger and Dale noted that all the activity of aqueous preparations of ergot could not be explained by the mere presence of ergotoxin and presupposed the existence of some then unknown compound. It was found that this action was due primarily to para-hydroxyphenylethylamin, but that some was due to iso-amylamin and phenylethylamin. Later Barger isolated beta-iminazolylethylamin from a dialyzed ergot preparation. This compound causes marked uterine contractions in the cat's uterus *in situ*. These workers published no quantitative determination of the amount of the amins present in ergot preparations. It is believed that these amins result from decomposition of various amino-acids in ergot, but the question arises as to whether ergotoxin may not really be a compound similar to the polypeptids and yield these amins on decomposition. Mr. W. I. Weaver, one of our students, has made several unsuccessful attempts to obtain beta-iminazolylethylamin from ergotoxin. He has obtained from ergotoxin, however, a coloring-matter apparently identical with the so-called sclererythrin.

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* From the Laboratory of Pharmacology, Leland Stanford Junior University.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Studzinski, J : Ueber die Blutdruckherabsetzende Wirkung der Nebennieren, Arch. f. exper. Path., 1912, lv, 155.

[2] Elliott, T. R.: Control of the Suprarenal Glands by the Splanchnic Nerves, Jour. Physiol., 1912, xliv, 378.

[3] Tanret has asserted that the reason ergotinin has been found inactive is that it is insoluble in water, hence cannot act, but that if it is dissolved in its weight of lactic acid and water is then added, such solution is active. Tanret, C.: Sur l'ergotinine crystallisée, Bull. Soč. Pharmacol., 1911, xviii, 20.

[4] For literature on ergot see Crawford, A. C.: Review of the Chemical Work Done on the Active Principle of Ergot, Am. Jour. Pharm., 1911, lxxxiii, 147

[5] Kazay, A.: Die wirksamen Bestandteile der Mutterkornpräparate und deren Wertbestimmung, Ztschr. d. allg. oesterr. Apoth.-Ver., 1910, xlviii, 547

Recently Marino-Zuco and Pasquero claimed to have isolated from ergot an active glucosid, clavisepsin,[6] but as yet this work has not been repeated by other investigators. It remains to be seen whether or not this glucosid will yield these amins.

The cock's-comb test was introduced as a qualitative means for determining the activity of ergot, as it was believed that the production of uterine contractions and of gangrene were the characteristic features of ergot poisoning, but more careful study of such cases shows that gangrene and uterine contractions, at least strong enough to produce abortion, do not occur in all cases of ergot poisoning in man. Again, at the time this test was introduced it was not possible to use the uterus in satisfactory biologic testing; hence, the cock's-comb test has been accepted provisionally, mainly because we knew of no other which was practical. Later it was believed to be roughly quantitative. Recently it has been shown that the uterus can be used for testing the action of various drugs. The action of ergot on the blood-pressure has also been proposed as a means of standardizing such preparations. These methods have been discussed in detail, theoretically by Crawford,[7] and tested practically by Goodale, Cronyn and Henderson, and more recently by Edmunds and Hale, and by Haskell and Eckler. Cronyn and Henderson state that the variations are so large as to be serious from a therapeutic aspect" (p. 210), and that, when tested on the cat's uterus the activity of ergot preparations "seemed to parallel their action on the blood-pressure quantitatively" (p. 208).

Against this view it may be urged that while beta-iminazolylethylamin causes marked contractions of the uterus it lowers the systemic blood-pressure, hence would probably interfere with the blood-pressure test.

Edmunds and Hale say that "the uterine response to ergot seems to run very closely parallel to the action on the cock's comb so that either may be used in ergot assay, and the choice between these for practical purposes would favor the cock's-comb method" (p. 46), but add that "the evidence . . . . is against the view that an absolute parallelism exists between the uterine and blood-pressure action of ergot" (p. 43).

At present there seems to be considerable confusion as to the action of ergot on the cock's comb. Small doses cause bluing, which may last for a few hours, and this in some cases is preceded by a temporary whitening, while repeated doses produce gangrene with permanent bluing and histologic changes.

Von Recklinghausen[8] found, in chronic ergot poisoning of cocks, that the larger arteries of the tips of the comb, but not the veins, were more or less completely filled with hyaline material, while the capillaries, which were filled with red cells, contained no hyaline substance. The veins also contained no hyalin. These results were corroborated by those of Gruenfeld.[9] From these anatomic changes von Recklinghausen argued that the gangrene was due to a persistent spasm of the small arteries and this view has been accepted almost to the present time. It must be remembered, however, that in cocks thrombi form under a variety of conditions (Krysinski).

In the temporary bluing produced by ergot no histologic changes indicative of gangrene have been found;[10] and it is impossible to see how the red color could return quickly if hyalin had formed. The ordinary bluing of the comb is not identical with gangrene (Krysinski). The cock's comb test seemed satisfactory because we knew that purified ergot preparations would cause a rise in blood-pressure, mainly from vascular constriction and the bluing of the comb, according to von Recklinghausen, was due to vasoconstriction. In reviewing the literature of ergot it was noted that several workers had reported that in deaths in animals from acute experimental ergot-poisoning the only lesions were marked venous dilatation with occasional ecchymoses.[11] It would seem that if arterial constriction was the primary factor there should be more persistent blanching, unless the arterial blood, forced by constricted arteries, was held in dilated veins; that is, unless the venous dilatation was marked and overcame the blanching due to arterial constriction.

We have made a number of attempts to measure the size of the comb during the stage of temporary bluing, but as yet, owing to defects in the oncometer, the results do not warrant any definite conclusions. Bluing of the comb has been seen in poisoning of cocks by cantharidin, a substance which does not raise the blood-pressure in these animals, but which exerts a direct injurious action on the capillary walls.[12] In rabbits repeated injections of ergot solutions are said to cause arterial degeneration.[13]

A solution of one tabloid of ergotoxin (1/100 grain) in 2 c.c. of water was slowly injected intravenously into a rooster, and while the blood-pressure rose markedly, even seven minutes after the injection was begun, the comb was still red, although it seemed blanched.[14] Later the comb became blue, but at this time other chemicals had been injected.

In several experiments on cocks we have noted that paraldehyd would cause bluing of the comb, and for this reason we discarded its use for anesthetizing these animals. Wernich dissected the artery and vein of one part of the rabbit and noted that after the subcutaneous injection of an aqueous extract of ergot the artery was slightly narrower, while the vein dilated. This preparation of Wernich's, however, contained some glycerin, which must be considered in interpreting his results. A preliminary blanching is often reported as preceding the bluing of the comb, hence some arterial constriction may be present. If the bluing of the cock's comb is primarily a vasoconstrictor phenomenon, it would follow that the intravenous injection of epinephrin would produce it, at least, if these vessels are under sympathetic control. But bluing did not immediately follow the intravenous injection of epinephrin into the vein of a white Leghorn rooster, although the experiments of Paton and Watson[15] have shown that epinephrin constricts the peripheral vessels of birds. Bluing did occur, however, after the rise in blood-pressure had begun to subside. Numerous workers have noted that in mammals, following the rise of blood-pressure from epinephrin, there is a marked vascular relaxation, and Erb[16] found venous dilatation in rabbits which had been frequently injected with epinephrin. Theoretically considered, bluing might result from changes in the blood, but for this view there is no experimental evidence.[17] In man, however, gangrene has occurred in carbon monoxid poisoning.[18]

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[6] Marino-Zuco, F., and Pasquero, V.: Sulla Clavisepsina, Gazz. chem. ital., 1911, xli, 318.

[7] Crawford, A. C.: Notes on Physiological Testing, Am. Jour. Pharm., 1908, p. 321. Goodale, A.: Pharmacological Estimate of the Value of Commercial Samples of the Liquid Extract of Ergot, Edin. Med. Jour., 1909, New Series, iii, 20. Cronyn, W. H., and Henderson, V. C.: Ergot, Jour. Pharmacol., 1909, i, 203. Haskell, C. C., and Eckler, C. R.: Relative Strength of Fresh and Old Samples of Ergot, Jour. Am. Pharm. Assn., 1912, i, 412. Edmunds, C. W., and Hale, W.: Physiological Standardization of Ergot, Bull. Hyg. Lab., U. S. P. H. and M.-H. S., 1911, No. 76. Dale, H. H.: Ergot and Its Active Principles, Jour. Am. Pharm. Assn., 1912, i, 1212.

[8] Von Recklinghausen, F.: Handbuch der allgemeinen Pathologie, Deutsch. Ztschr. f. Chir., 1883.

[9] Gruenfeld, A.: Ueber die anatomischen Veränderungen bei chronischer Sphacelinvergiftung, Arb. des Pharmakol. Inst. z. Dorpat, iv, 1890.

[10] Krysinski, S.: Pathologische und kritische Beiträge zur Mutterkornfrage, p. 75.

[11] Montanari, G.: Delle alterazioni materiali prodotte per l'uso della segala cornuta sugli animali vivi, Ann. univ. di med. d'Omodei, 1850, cxxxvi, 402; quoted from Jolly, p. 38. Wernich, A.: Beitrag zur Kenntniss der Ergotinwirkungen, Archiv. f. path. Anat., 1872, lvi, 505. Wernich, A.: Einige Versuchsreihen über das Mutterkorn, Beitr. zur Geburtsh. u. Kynäk., iii, 81, 1874. Boreischa: Ueber die Wirkung des Mutterkorns auf das Gefässsystem, Arb. a. d. pharm. Lab. z. Moskau, 1876, i, 50, quoted from Jolly. See also the reports of autopsies collected by Krysinski, pp. 91, 107, etc.

[12] Ellinger, A.: Weitere Studien über Cantharidin, Arch. f. exper. Path., 1908 lviii, 424. Sussnitzki, J.: Das Verhalten der Hühner gegen Cantharidin, Dissert, Koenigsberg, 1903.

[13] D'Amato, L.: Neue Untersuchungen über die exper. Pathologie der Blutgefässe, Arch. f. path. Anat., 1908, excii, 92.

[14] For details as to the blood-pressure in birds, see Stübel, J.: Beiträge zur Kenntnis der Physiologie des Blutkreislaufes der Vögel, Habilitationsschrift, Jena, 1910.

Bluing of the comb from even small doses of ergot would seem to be a feature of intoxication, because severe constitutional symptoms usually accompany it. Perhaps the bluing may be explained as a venous dilatation, but the cause of this venous hyperemia is unknown. Theoretically considered, this may result from active dilatation of the veins, or from venous obstruction, or from weakening of the arterial current, either by arterial relaxation or by cardiac weakening. Apparently the condition seems to resemble that described by Henderson in shock in mammals. The fact that after repeated ergot injections the comb hypertrophies[19] would suggest venous hyperemia (Bier's method).

It is believed that para-hydroxyphenylethylamin and beta-iminazolylethylamin are the most important of the ergot amins and that the activity of some preparations of ergot is largely due to these compounds, although part is due to ergotoxin, and that only small amounts of iso-amylamin and phenylethylamin are present in such extracts. If this is true, then the value of the cock's-comb test must depend on whether these amins will produce bluing of the cock's comb, or intensify this action of ergotoxin; but so far as we can learn no such experiments have yet been made with these amino-compounds.

HYDROXYPHENYLETHYLAMIN

Tyramin is said by the manufacturers to be synthetic para-hydroxyphenylethylamin.

EXPERIMENT 1.—On Oct. 16, 1911, a game-cock (weight 1.2 kg.) was subcutaneously injected with a solution of one "tabloid" (5 mg.) of tyramin (Burroughs, Wellcome & Co.) and, though the animal was kept under observation for two hours, there was no bluing of the comb or wattles. Some mucous stools were passed.

On Oct. 19, 1911, the same rooster was injected with a solution of two "tabloids" (10 mg.) of tyramin. This injection was also negative save for the production of diarrhea.

On Oct. 23, 1911, this rooster weighed 1.4 kg. and received subcutaneously a solution of three tabloids (15 mg.) of tyramin. It produced no noticeable effect.

EXPERIMENT 2.—On Oct. 24, 1911, a white Leghorn rooster (weight 1.6 kg.) was injected subcutaneously at 2.19 p. m. with a solution of 5 tabloids of tyramin (25 mg.). At 2:36 p. m. the breathing was apparently deeper. At 3:20 p. m. the comb and wattles seemed normal. The head of the rooster then fell and he seemed sleepy, but still stood on his feet. At 4:00 p. m. he inclined slightly forward as if asleep. At 4:47 p. m. the rooster was very dull and would stay on his side if so placed. The comb and wattles were red and warm. The mouth was closed and apparently there was no dyspnea, the effects of the drug differing in this respect from those of ergotoxin. The animal made no attempt to escape when freed from restraint. At 5:10 p. m. he appeared normal. At no time was there any mucous diarrhea and the color of the comb and of the wattles remained unchanged.

EXPERIMENT 3.—The intravenous injection of 5 mg. and also of 10 mg. of tyramin into an anesthetized rooster (weight 1.5 kg.) caused a distinct rise in blood-pressure without bluing the comb.

ISO-AMYLAMIN HYDROCHLORID

EXPERIMENTS 4, 5, 6 AND 7.—On Oct. 24, 1911, a white Leghorn rooster (weight 2 kg.) was injected subcutaneously with a solution of 50 mg. of isoamylamin hydrochlorid (Kahlbaum). This animal was kept under observation for one hour, but there were no noticeable effects. A similar negative experiment resulted from the injection of 48 mg. of this salt into a white Leghorn rooster (weight 1.7 kg.). On May 22, 1913, a white Leghorn rooster (weight 1.9 kg.) was injected subcutaneously with a solution of 80 mg. iso-amylamin hydrochlorid, but this produced no effect. A similar experiment with 130 mg. also proved negative (weight of Rooster 1.7 kg.).

ERGOTOXIN

EXPERIMENT 8.—On Oct. 26, 1912, a white Leghorn rooster (weight 1.7 kg.) received subcutaneously an injection of one tabloid of ergotoxin (Burroughs, Wellcome & Co.) dissolved in water with two drops of 10 per cent. solution of sodium hydroxid. Each tabloid was said to contain 1/100 grain of ergotoxin. In one hour there was some slight bluing of the tips of the comb, and the wattles became cooler. There was some diarrhea. About forty-five minutes later the bluing became very faint. This rooster had been injected on October 25 with 48 mg. iso-amylamin hydrochlorid.

EXPERIMENT 9.—On October 25, the game-cock (weight 1.2 kg.) which had been used October 25 for the injection of tyramin received subcutaneously a solution of one tabloid ergotoxin (1/100 grain). One hour later the comb was a trifle bluer, but nothing striking was seen even two hours after the injection.

EXPERIMENT 10.—On October 25, a white Leghorn rooster (weight 1.9 kg.) received subcutaneously a solution of two tabloids of ergotoxin. These tabloids formed a colloidal solution with water, so that the full effect of the ergotoxin could not be expected. In one hour and twenty-six minutes the comb was slightly blue and cool, while the wattles, which before the injection had been red and warm, became cool, although they retained their red color.

EXPERIMENT 11.—On February 14, a white Leghorn rooster was injected with a solution of three tabloids of ergotoxin. One hour and eighteen minutes later there was slight bluing of the tips of the comb, but they became decidedly blue one half hour later.

EXPERIMENT 12.—On October 30, a white Leghorn rooster (weight 2.1 kg.) was injected subcutaneously with a solution of three tabloids of ergotoxin dissolved with 1 c.c. of 80 per cent. alcohol. Within fifty-two minutes the wattles and comb became blue and cold. The rooster stood motionless and the mouth was kept closed.

EXPERIMENT 13.—On October 30, a white Leghorn rooster received an injection of a solution of five tabloids of ergotoxin in 1 c.c. of 80 per cent. alcohol with water. In one and a half hours the comb and wattles became blue and cold. The rooster stood erect and held its mouth open. One hour and three-quarters later the comb was still blue.

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[15] Paton, D. N., and Watson, A.: Actions of Pituitrin, Adrenalin, and Barium on the Circulation of the Bird, Jour. Physiol., 1912, xliv, 413.

[16] Erb, W., Jr.: Experimentelle und histologische Studien über Arterienerkrankung nach Adrenalininjektionen, Arch. f. exper. Path., 1905, liii, 183. Neujean, V.: Contribution à l'étude expérimentale de l'adrénaline, Arch. internat. de pharmacodyn., 1904, xiii, 50.

[17] Jolly, P.: Die Einwirkung des Mutterkorns auf die Circulation, Preisschrift, Göttingen, 1905.

[18] McLean, A.: Carbon Monoxid Poisoning Resulting in Gangrene of Both Legs, THE JOURNAL A. M. A., May 20, 1911, p. 1455.

[19] See Crawford, A. C.: Am. Jour. Pharm., 1908, p. 326.

Ergotoxin phosphate was bought of Burroughs, Wellcome & Co. and 100 mg. was suspended in 50 c.c. of water.

Experiment 14.—On Aug. 5, 1912, at 3:30 p. m., a white Leghorn rooster (weight 1.6 kg.) was injected subcutaneously with 2.6 c.c. of this suspension of ergotoxin phosphate (2 mg. in 1 c.c. water). At 4:07 p. m. the comb, which had previously been red and warm, became blue and cold and showed some whitish discoloration. The mouth was held shut. The wattles were blue and cold at 4:35 p. m.; the wattles also blue, and the mouth was open (dyspnea). The rooster was very dull at 5:16 p. m. The blue comb showed white areas, and the wattles were cold and dark. On August 6 at 9 a.m. the comb and wattles were both red, although the comb was cold.

Experiment 15.—On Aug. 5, 1913, a white Leghorn rooster (weight 1.9 kg.) was injected subcutaneously with 6.4 c.c. (12.8 mg.) of the same suspension. The injection was made at 3:37 p. m. At 4:08 p. m. the comb was very blue and cold, but showed white areas. The wattles were bluish. At 4:35 p. m. the bluing was more marked. The rooster then held its mouth open. At 5:17 p. m. the bluing was still marked. Even during the afternoon of the following day the comb and wattles were blue and cool.

Experiment 16.—On the same date a white Leghorn rooster (weight 1.6 kg.) was injected subcutaneously with 10.7 c.c. of the same emulsion (21.4 mg.). In twenty-four minutes the comb became decidedly blue and showed white (blanching) areas. The wattles were cold and blue. Soon the head of the rooster fell forward as if he were too dull, or too sick, to hold it up. The mouth was held open. One hour and thirty-two minutes after the injection the comb became lighter in color, but still remained cold. The following morning most of the bluing had disappeared, although part of the comb was very dark and the wattles were cool.

Edmunds has reported that 2 c.c. of certain fluidextracts of ergot have about the same action on the cock's comb as 5 mg. of ergotoxin phosphate.

To see if the presence of tyramin would intensify the action of ergotoxin these compounds were injected simultaneously.

Experiment 17.—On Aug. 11, 1912, a white Leghorn rooster (weight 1.5 kg.) was injected subcutaneously at 1:50 p. m. with a solution of one tabloid of tyramin (5 mg.) and one of ergotoxin (1/100 grain). At 2:23 p. m. the tips of the comb were slightly blue and cool and the wattles were cool. At 4:38 p. m. the condition was about the same.

Experiment 18.—At 1:50 p. m. on the same date a rooster (weight 1.6 kg.) was injected subcutaneously with a solution of three tabloids of tyramin and one of ergotoxin. At 2:22 p. m. the tips of the comb were blue and cool. At 2:45 p. m. the comb was bluish and cold while the wattles were cold. At 3:45 p. m. the condition remained about the same, but at 4:38 p. m. the comb was red though cool, and the wattles were red and cool.

BETA-IMINAZOLYLETHYLAMIN

Experiment 19.—On May 15, 1913, a white Leghorn rooster (weight 1.8 kg.) received subcutaneously at 1:45 p. m. a solution of 8 mg. beta-iminazolylethylamin. In sixteen minutes the comb became blue and cool, while the wattles were red though cool. This bluing of the comb began to disappear at 2:27 p. m. and had practically disappeared at 3:45 p. m.

Experiment 20.—On the same day a white Leghorn rooster (weight 2 kg.) was injected at 1:52 p. m. with a solution of 16 mg. of beta-iminazolylethylamin. The comb became blue in twelve minutes. This bluing disappeared at 3:26 p. m.

Experiment 21.—Another rooster (weight 2.4 kg.) was injected with a solution of 12 mg. at 2:10 p. m. In nine minutes the comb and wattles became very blue and cool. At 3:15 p. m. the animal seemed slightly unsteady on his feet. The bluing disappeared at 4 p. m.

Experiment 22.—The injection of a solution of 4 mg. of this compound produced no effect on a rooster weighing 1.7 kg. In none of these animals was there any dyspnea, or any of the severe constitutional symptoms which result from the injection of ergotoxin, and the bluing which resulted was much more transitory in action and appeared much more quickly.

Experiment 23.—The intravenous injection of beta-iminazolylethylamin into the rooster (weight 1.5 kg.) which had previously been injected with tyramin caused a marked fall in blood-pressure with bluing of the comb.

Experiment 24.—On May 24, 1913, a white Leghorn rooster (weight 1.9 kg.) was injected at 10:25 a. m. with a solution of 12 mg. beta-iminazolylethylamin and two tabloids (1/50 grain) of ergotoxin. In four minutes the tips of the comb became blue. At 10:34 a. m., the comb was very blue and the wattles were dark in color and cooler. At 10:51 a. m., the comb was very blue, but the rooster seemed bright and the mouth was kept closed. At 11.24 a. m. the same condition was present. At 1:35 p. m. the comb was very slightly blue and cold, while the wattles were red, though cold.

Experiment 25.—On the same day at 10:42 a. m. a white Leghorn rooster (weight 1.5 kg.) was injected subcutaneously with a solution of 6 mg. of beta-iminazolylethylamin with one tabloid of ergotoxin (1/100 grain). In five minutes the tips of the comb became slightly bluer and cool. At 10:58 a. m. the comb was bluer and the edges of the wattles were bluing. At 11:24 a. m. the condition was about the same. At 1:35 p. m. the comb and wattles were slightly blue and cold.

Arguing from these experiments we would say that, if the subcutaneous injection of an ergot preparation was followed in five or six minutes by bluing of the comb, without dyspnea, etc., that beta-iminazolylethylamin was probably present.

It is interesting to note that beta-iminazolylethylamin which produces vasodilatation in carnivora[20] and a fall in blood-pressure in cocks, and paraldehyd, which in large doses also dilates the vessels, caused bluing of the comb, while, on the other hand, the vasoconstrictors, such as tyramin, iso-amylamin and epinephrin, did not cause bluing save in the case of epinephrin, when the bluing occurred late, and after the vasoconstriction had begun to subside. Dale has noted that in cats ergotoxin in small doses will stimulate vasomotor nerve endings, while large amounts will paralyze them, but fowls are said to be resistant to this paralytic action,[21] at least, if measured by the vasomotor reversal test.

Perhaps the bluing of the comb by ergotoxin may be due to the presence in it of a chemical nucleus similar to beta-iminazolylethylamin.

Betain and cholin have been found in ergot by various workers, but Rielander has shown that these bodies, unlike ergot, will not produce local gangrene. We injected subcutaneously 16 mg., and also 20 mg., of cholin hydrochlorid into roosters, but without effect on the comb.

If we accept the view that much of the pressor activity of ergot is due to para-hydroxyphenylethylamin and that this pressor action has therapeutic value and that this amin will produce uterine contractions, then it follows from our experiments that the cock's-comb test cannot be an accurate test for the full physiologic activity of ergot, but it may be of value for determining the presence of ergotoxin or of beta-iminazolylethylamin.

The question to be decided is whether or not we shall standardize for ergotoxin alone. This cannot be fully settled until we know more of the therapeutic value of the ergot constituents,[22] "and in what relative proportions they should occur."

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[20] Dale, H. H., and Laidlaw, P. P.: Physiologic Action of Beta-Iminazolylethylamin, Jour. Physiol., 1910, xli, 343.

[21] Dale, H. H.: Some Physiological Actions of Ergot, Jour. Physiol., 1906, xxxiv, 172.

[22] Dale, H. H.: Jour. Am. Pharm. Assn., 1912, i, 1219.

In this country the most popular official preparation of ergot is the fluidextract and this we have tested many times on cocks, but so far as we can remember, bluing never immediately followed the subcutaneous injection of such preparations; hence we would argue that these preparations contained very little, if any, of beta-iminazolylethylamin. It may be noted that beta-iminazolylethylamin was originally obtained from a dialyzed ergot preparation, that is, one which had long been exposed to bacterial changes; whereas the alcohol of the fluidextract would presumably prevent the changes leading to the formation of this compound, so that, for practical purposes, in fluidextract of ergot we probably have to consider only para-hydroxyphenylethylamin and ergotoxin.

Dale and Dixon[23] were unable to produce abortion in pregnant animals by the injection of para-hydroxyphenylamin and Guggenheim[24] reported a similar experience with it in pregnant women: hence unless it acts synergistically and intensifies the uterine action of ergotoxin, we have only the latter to consider and the assay for ergotoxin would be all that we could demand at present.

Some years ago it was shown[25] that in certain ergot preparations all the compounds which caused bluing of the cock's comb could be shaken into alkaline ether (Keller's method) and it was noted that this shaking would cause a rise in blood-pressure. Recently we have found that ergotoxin, tyramin, ergamin and phenylethylamin can be shaken into alkaline ether, but in such a shaking ergotoxin soon took a bluish color, indicating decomposition, and this may perhaps explain some of the results with the Keller method.

Perhaps later experiments may show that we may be able to reach a satisfactory conclusion as to the full physiologic activity of ergot preparations by determining the nitrogen[26] content of the alkaline-ether shaking, or it may be necessary to make two tests, one chemical and one biologic.

CLASSIFICATION AND TREATMENT OF NEPHRITIS ACCORDING TO FUNCTIONAL TESTS

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Nephritis may be defined as an affection of both kidneys in which inflammatory changes occur but do not lead to suppuration. Functionally the kidney consists of two distinct apparatus, the tubular and the vascular, the latter comprising the glomeruli with their afferent and efferent branches and the small branches of the renal artery passing between the tubules.

By means of poisonous chemicals it is possible to injure either system at will and to study the other in its normal condition. Salts of chromium or corrosive sublimate cause marked changes in the epithelium of the convoluted tubules, with no changes in the glomeruli. In such a tubular nephritis, large amounts of albumin and casts are found.

On the other hand, a nephritis produced by cantharides or arsenic affects especially the glomeruli, and in this form, known as vascular nephritis, there occurs little albumin and few casts, but many red blood-corpuscles.

A series of experiments recently carried on by Schlayer and his collaborators[1] introduced a means of determining whether in a case of nephritis the tubular or vascular apparatus was especially affected. First, in normal animals, they determined how long a time was required for the elimination of definite amounts of different drugs.

The work finally narrowed down to the use of three substances, of all employed, iodin, sodium chlorid and milk-sugar. The rate of elimination of these substances in healthy animals was found to be a constant one, independent of the amount of water consumed or of the character of the diet; 0.025 gm. potassium iodid or 0.5 gm. sodium chlorid, given intravenously, passed out within twenty-four hours, while 1 gm. milk-sugar, likewise given intravenously, was eliminated within six hours. When these tests were applied to animals suffering with experimental nephritis, it was found that those with the tubular type eliminated milk-sugar within the normal time, whereas the elimination of salt and iodin was greatly delayed. Animals with vascular nephritis, on the contrary, eliminated salt and iodin normally, while milk-sugar excretion was much delayed.

Further experiments showed that not only is elimination affected differently in the two types but also the normal contraction and dilatation of the renal vessels and secretion of urine, in response to various renal stimuli, vary according to whether the tubular or the vascular apparatus is diseased. For instance, it was found that certain diuretics, as epinephrin, cause normally a decrease in the size of the kidney at the time of the rise in blood-pressure, while caffein causes an increase in kidney volume with no change in blood-pressure. In animals with tubular nephritis these changes occurred as in the normal, but in the vascular type the blood-vessels were no longer able to respond to the different stimuli, and contraction, dilatation and secretion became much less or failed altogether. In very mild vascular nephritis, and occasionally in the beginning of a tubular nephritis, these variations occurred with much greater intensity than normal, showing a great irritability of the vascular structures.

This irritability was especially manifest when large amounts of water were given. A normal animal, when given an increased quantity of water, reacts with a corresponding polyuria. When an increased quantity of water was given to animals with experimental nephritis, this response did not occur, except in the extremely mild vascular type and occasionally in the beginning of a tubular nephritis, when the excessive irritability of the vascular structures could be demonstrated in the manner just described.

The experiments were next applied to human beings. First it was ascertained that in persons with healthy kidneys the three substances were eliminated at a definite rate: 0.5 gm. sodium or potassium iodid in from forty to fifty hours, 10 gm. sodium chlorid in thirty-six hours, and 2 gm. milk-sugar in four hours.

In applying the tests to nephritics it was found possible to divide the cases into those with normal elimination of salt and iodin, but with delayed elimination of milk-sugar, and those with normal milk-sugar elimination but delay in excretion of salt and iodin. Each group has associated with it certain clinical manifestamay be accomplished by excluding chlorids in tubular nephritis, nitrogenous food in the azotemic variety, and restricting, or excluding fluids in the vascular form.

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[23] Dale, H. H., and Dixon, W. E.: Action of Pressor Amins Produced by Putrefaction, Jour. Physiol., 1909, xxxix, 36.

[24] Guggenheim, M.: Zur Kenntniss der Wirkung der P-Oxyphenylaethylamins, Therap. Monatsh., 1912, xxvi, 795.

[25] Dohme, A. R. L., and Crawford, A. C.: The Active Principle of Ergot, Am. Jour. Pharm., 1902, 503.

[26] Kazay, A.: Die wirksamen Bestandteile der Mutterkornpräparate, Ztschr. d. allg. oesterr. Apoth.-Ver., 1910, p. 547.

[1] Schlayer, K.: Neuere klinische Anschauungen über Nephritis, Med. Klin., 1912, viii, No. 37, supplement; abstr., THE JOURNAL A. M. A., Oct. 26, 1912, p. 1583.

For the ideas here expressed, I am indebted to the teachings of Dozent H. Eppinger of the First Medical Clinic, Vienna.

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RESULTS OF SCHIÖTZ METHOD IN RIDDING DIPHTHERIA CASES AND CARRIERS OF DIPHTHERIA BACILLI IN THE STATE AGRICULTURAL AND INDUSTRIAL SCHOOL

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In the New York State Agricultural and Industrial School there are approximately 740 boys, ranging in age from 6 to 17 years. They are distributed, twenty-five boys to a colony, and sleep in dormitories. Coming in many cases from jails, detention homes, and slums of the cities in the state, the boys are frequently found to be carriers of the Klebs-Löffler bacillus. There have been a large number of cases of this disease in the institution.

By the early and bold use of the excellent and unlimited supply of antitoxin furnished us by the New York State Department of Health, I have had no difficulty in treating these cases; but the trouble has concerned their release from quarantine (that is, after two consecutive negative cultures at five-day intervals), as some of the cases remained positive for months. As soon as a case developed in a colony the patient was immediately removed therefrom, the cottage thoroughly fumigated with sulphur, the laundry immersed over night in 1:2,000 mercuric chlorid solution, and each inmate immunized by the subcutaneous administration of 1,000 units of diphtheria antitoxin. Cultures were taken from the nasal passages and throats of each inmate, and from four to ten were usually found to be carriers; in which case they were sent to the contagious hospital, the capacity of which (sixteen), was usually taxed to its utmost.

In spite of the following measures, each of which was given a conscientious trial, it was often a matter of months to obtain the two negative cultures necessary for release: spraying nasal passages and pharynx every three hours with normal saline, also gargling throat with this solution; swabbing tonsils and fauces with 10 per cent. silver nitrate solution daily; spraying nasal passages and pharynx and gargling, with one-fourth dilution of liquor antisepticus; gargling every four hours with brewer's yeast; gargling and spraying every three hours with lactic acid buttermilk.

Having read articles in various medical magazines of the successful use of a twenty-four-hour culture in plain bouillon of the *Staphylococcus pyogenes aureus* in such cases,[1] we made arrangement with Dr. C. F. Chaffe, in charge of the Monroe County laboratory, Rochester, a branch of the New York State Health Department, to supply us weekly, or oftener if necessary, with from 4 to 6 ounces of this material. We began using it as a spray in a Devilbiss atomizer, once in the nose and throat of each new inmate, and every three hours into the nose and throat of all cases and carriers.

The following results were obtained:

With the old methods: average number of cases 35; average time of isolation thirty-two days; average number of carriers 22; average time of isolation thirty-four days.

With the staphylococcus broth: average number of cases 32; average time of isolation twenty-two days; average number of carriers 34; average time of isolation, eleven days.

So many carriers were entering the school, especially during the winter, that the request was sent to magistrates committing boys to the school to send with each boy a certificate from the local health officer that the boy was free from any contagious or infectious disease, and that a culture had been taken from the boy's throat, and found to be free from diphtheria bacilli. This has been done in the majority of cases, so that for the past six months we have had only a few sporadic cases of a disease which had prior to these measures caused two epidemics.

From our experience, this method appears to be absolutely innocuous and capable of causing the early disappearance of the diphtheria bacillus.

A NOTE ON THE TREATMENT OF COUGH IN ADVANCED PULMONARY TUBERCULOSIS

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As the cough in pulmonary tuberculosis is often a very distressing symptom, especially during the night hours, any remedy that will give relief to the sufferer is of value.

An intelligent patient of mine, who was suffering with advanced pulmonary tuberculosis, first called my attention to the fact that when he took acetylsalicylic acid (aspirin) *in the evening*, his cough was much relieved and as a result he passed a more comfortable night.

I made use of this observation in several other cases of advanced pulmonary tuberculosis, asking the patients to let me know if they received any benefit from the treatment and in every case reports were favorable.

I now frequently advise patients with advanced pulmonary tuberculosis to take acetylsalicylic acid 5 or 10 grains about 8 p. m. when they are troubled with an excessive cough at night. The smaller dose is often sufficient to control the cough and is not so liable to cause a night sweat as is the larger dose.

I do not recall ever having seen this fact mentioned in the current medical literature and I am unable to find any mention of it in the books on the subject which I have consulted. I would suggest that this remedy be given a trial before resorting to the use of opium or its derivatives, in cases in which local treatment of the nose, pharynx, larynx or postural treatment of the patient is not successful.

5346 Wayne Avenue.

A RAPID METHOD FOR RIPENING STAINS

Lawrence W. Strong, M.D., New York

Pathologist, Woman's Hospital

The awkward necessity of waiting several weeks for hematoxylin stains to ripen has led me to apply a method originally described by Balch for the ripening of Wright's stain.

This consists of a freshly precipitated silver oxid which, when added to any hemalum solution or to any methylene blue solution, will polychromize it within a few minutes.

A gram of silver nitrate dissolved in 50 c.c. of distilled water is treated with a dilute solution of sodium hydroxid, little by little, until no more brown precipitate of silver oxid appears. The fluid should be shaken after each addition in order to secure good flocculation. The precipitate is then washed thoroughly until it is free from alkali. This may be tested by litmus or phenolphthalein; but ten or a dozen washings will suffice. This silver oxid is added to the hemalum or the methylene blue solution, allowed to stand for an hour or two and then filtered, when the stain is ready for use.

Unna's polychrome methylene blue may be ripened rapidly in this way. In preparing eosinate of methylene blue, as in Wright's stain, the methylene blue is first polychromized with the silver oxid for a day or two and then the eosin solution is added. This obviates the necessity of steaming the methylene blue and, what is more important, it is certain in its action, while the steaming is uncertain and sometimes fails.

90 Morningside Drive.

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[1] Schiötz: Cure of Chronic Diphtheria Bacillus Carriers, Ugesk. f. Læger, 1909, lxxi, No. 49; abstr., The Journal A. M. A., Jan. 29, 1910, p. 422. Page, Henry: Diphtheria Bacillus Carriers, Arch. Int. Med., January, 1911, p. 16. Lorenz, W. F., and Ravenel, Mazyck P.: Treatment of Diphtheria Carriers by Overriding with Staphylococcus Aureus, The Journal A. M. A., Aug. 31, 1912, p. 690. Wiener, R. G.: New York State Jour. Med., February, 1913.

A SIMPLE METHOD OF APPLYING THE VON PIRQUET TEST

Louis Shalet, M.D., New York
Attending Physician, Tuberculosis Clinics, Department of Health

The method consists in using the flat end (about 2 mm. wide) of sterile wooden toothpicks instead of the von Pirquet borer or crisscross scratching with a needle. It is applied as follows: After cleansing the flexor surface of the forearm in the usual manner, the flat end of the sterile toothpick is dipped into the tuberculin, is next gently pressed on the desired spot on the skin, and, while held in the middle by the thumb and index finger, a few turns (two to and fro turns, or four in all, to be exact) are made by rolling the toothpick on its own axis between the fingers. The result will be a very neat round abrasion of the epithelium without the appearance of blood. The toothpick is burnt after use. The same procedure is gone through with the control abrasion, another toothpick being used, of course. It is recommended that no finger be kept on the other end of the toothpick, as its weight tends to undue pressure on the skin, with resultant pain.

The advantages of this method of application are many. It is simple. It eliminates the medicine dropper or tiny wooden spatula with which to apply the tuberculin. The test could be done in a sterile manner to a number of children in a short time, such as obtains in a busy children's clinic. It does not unduly frighten the ever-apprehensive child with the exhibition of bright metal instruments, such as the von Pirquet borer or even a needle. Lastly it is done so quickly as to be decidedly less painful to the patient.

1041 Madison Avenue.

TREATMENT OF PELLAGRA WITH LACTIC ACID BACILLI

William Lamar Law, M.D., Montgomery, Ala.

The last five typical cases of pellagra in my practice have been treated with Bulgarian lactic acid bacilli in tablet form, each about 7½ grains. Two tablets were given half an hour before each meal and at bedtime.

The improvement in the appearance and subjective symptoms of these patients warrants this preliminary report.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

EMETINE HYDROCHLORIDE.—Emetinae Hydrochloridum. Emetine hydrochloride is the hydrochloride, $C_{30}H_{44}N_2O_4.2HCl.2H_2O$, of an alkaloid found in *Cephaelis ipecacuanha*.

Emetine hydrochloride occurs as a white crystalline powder, soluble in water and alcohol. The aqueous solution of emetine hydrochloride is practically neutral toward litmus. The general alkaloidal reagents precipitate emetine, even from dilute solutions. Alkalies precipitate emetine from aqueous solutions of its salts. A freshly prepared concentrated solution of ammonium molybdate in concentrated sulphuric acid (Froehde's reagent) is colored green by emetine hydrochloride.

If about 0.10 Gm. of emetine hydrochloride be dissolved in water, the solution made alkaline with potassium hydroxide, shaken with ether till nothing more is extracted, then acidified and made alkaline with ammonia water and again extracted with ether, the second ether extraction on evaporation should leave a residue which, when treated with Froehde's reagent, should not become purple.

If emetine hydrochloride be dried to constant weight at 100°, the loss in weight should not exceed 8 per cent. of the original substance.

Actions and Uses.—Emetine acts similarly to Ipecac but is relatively more nauseant and less emetic, and causes relatively less renal irritation, but more cardiac depression. Emetine hydrochloride in the form of injections has been reported to be of especial value in amebic dysentery.

Dosage.—Expectorant, from 0.005 to 0.01 Gm. (1/12 to 1/6 grain). From 0.01 to 0.02 Gm. (1/6 to 1/3 grain) causes emesis, but cephaeline is preferred as an emetic. By hypodermic injection, 0.03 Gm. (1½ grain).

Non-Proprietary Preparations:

Emetine Hydrochloride, Merck.—Manufactured by E. Merck, Darmstadt, Germany (Merck and Co., New York).

Ampuls Emetine Hydrochloride, Mulford.—Each ampul contains emetine hydrochloride 30 mg. (½ grain). Prepared by the H. K. Mulford Co., Philadelphia.

ACNE VACCINE.—(See N. N. R., 1913, p. 221.)
Greeley Laboratories, Inc., New York City.

Acne Vaccine.—It is marketed in six graduated doses, containing respectively 1, 3, 5, 8, 10 and 12 millions of bacteria killed by heat; put up in hypodermic containers.

BACILLUS COLI VACCINE.—(See N. N. R., 1913, p. 221.)
Greeley Laboratories, Inc., New York City.

Colon Vaccine.—It is marketed in six graduated doses containing respectively 25, 75, 200, 400, 650 and 1,000 millions of bacteria killed by heat; put up in hypodermic containers.

BACILLUS PYOCYANEUS VACCINE.—(See N. N. R., 1913, p. 222.)
Greeley Laboratories, Inc., New York City.

Pyocyaneus Vaccine.—It is marketed in six graduated doses containing respectively 25, 75, 200, 400, 650 and 1,000 millions of bacteria killed by heat; put up in hypodermic containers.

GONOCOCCUS VACCINE.—(See N. N. R., 1913, p. 223.)
Greeley Laboratories, Inc., New York City.

Gonococcus Vaccine.—It is marketed in six graduated doses containing respectively 10, 25, 75, 150, 300 and 500 millions of bacteria killed by heat; put up in hypodermic containers.

MENINGOCOCCUS VACCINE.—(See N. N. R., 1913, p. 223.)
Greeley Laboratories, Inc., New York City.

Meningococcus Vaccine.—It is marketed in three doses containing respectively 500, 1,000 and 1,000 millions of bacteria killed by heat; put up in hypodermic containers.

PNEUMOCOCCUS VACCINE.—(See N. N. R., 1913, p. 224.)
Greeley Laboratories, Inc., New York City.

Pneumococcus Vaccine.—It is marketed in six graduated doses containing respectively 10, 25, 75, 150, 300 and 500 millions of bacteria killed by heat; put up in hypodermic containers.

STAPHYLOCOCCUS VACCINES.—(See N. N. R., 1913, p. 225.)
Greeley Laboratories, Inc., New York City.

Staphylococcus Albus Vaccine.—It is marketed in six graduated doses containing respectively 50, 100, 200, 400, 700 and 1,000 millions of bacteria killed by heat; put up in hypodermic containers.

Staphylococcus Aureus Vaccine.—It is marketed in six graduated doses containing respectively 50, 100, 200, 400, 700 and 1,000 millions of bacteria killed by heat; put up in hypodermic containers.

STREPTOCOCCUS VACCINES.—(See N. N. R., 1913, p. 226.)
Greeley Laboratories, Inc., New York City.

Streptococcus Vaccine.—It is marketed in six graduated doses containing respectively 10, 25, 75, 150, 300 and 500 millions of bacteria killed by heat; put up in hypodermic containers.

Streptococcus Erysipelatis Vaccine.—It is marketed in three graduated doses containing respectively 10, 25 and 60 millions of bacteria killed by heat; put up in hypodermic containers.

TYPHOID VACCINE.—(See N. N. R., 1913, p. 227.)
Greeley Laboratories, Inc., New York City.

Typhoid Bacillus Vaccine.—It is marketed in three doses containing respectively 500, 1,000 and 1,000 millions of bacteria killed by heat; put up in hypodermic containers.

NEW TUBERCULIN, KOCH, BACILLI EMULSION. ("B. E.").—(See N. N. R., 1913, p. 233.)
Greeley Laboratories, Inc., New York City.

Tuberculin B. E.—It is marketed in six graduated doses of from 1/1000 to 1/5000 mg. in hypodermic containers.

Minutes of the Sections

(*Concluded from page 2096*)

THE REGISTRATION AT MINNEAPOLIS

The total registration at the Minneapolis Session was 3,246. Below are given two summaries, one by sections and one by states.

REGISTRATION BY SECTIONS

Practice of Medicine	912
Surgery	968
Obstetrics, Gynec. and Abd. Surg.	288
Ophthalmology	220
Laryngology, Otology and Rhinology	143
Diseases of Children	103
Pharmacology and Therapeutics	32
Pathology and Physiology	78
Stomatology	33
Nervous and Mental Diseases	81
Dermatology	55
Preventive Medicine and Public Health	115
Genito-Urinary Diseases	62
Hospitals	22
Orthopedic Surgery	44
Registrations without specifying any one section	90

REGISTRATION BY STATES

Alabama	11	Nevada	4
Arizona	10	New Hampshire	3
Arkansas	12	New Jersey	22
California	43	New Mexico	5
Colorado	40	New York	108
Connecticut	5	North Carolina	3
Delaware	..	North Dakota	107
District of Columbia	19	Ohio	96
Florida	5	Oklahoma	15
Georgia	10	Oregon	12
Idaho	6	Pennsylvania	79
Illinois	320	Rhode Island	4
Indiana	85	South Carolina	3
Iowa	311	South Dakota	96
Kansas	45	Tennessee	27
Kentucky	25	Texas	33
Louisiana	17	Utah	9
Maine	4	Vermont	5
Maryland	18	Virginia	4
Massachusetts	50	Washington	13
Michigan	106	West Virginia	6
Minnesota	944	Wisconsin	268
Mississippi	3	Wyoming	4
Missouri	126	Alaska	1
Montana	26	Canada	2
Nebraska	73	Philippine Islands	1

Notice on Section Transactions

Those who desire copies of the 1913 Transactions of any of the sections, but whose names are not on the permanent subscription list, should order at once, as printing will soon commence. The editions of each of these section transactions is limited. Only enough copies are printed to supply the probable demand, and each year some persons order too late to be supplied. Each volume is a cloth-bound book containing the articles and discussions in that particular section. The price, when ordered in advance, is $1.00 a volume, payable at time of delivery.

It is to be remembered that one may give a permanent order for Transactions; and those specified are sent, from year to year, until the order is cancelled. Address orders to the American Medical Association, 535 Dearborn Avenue, Chicago.

[The following are the minutes of the sections which were not published last week.]

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Tuesday, June 17—Afternoon

The Chairman, Dr. Robert Levy of Denver called the meeting to order.

Dr. Levy then read the Chairman's address, entitled "The Dignity of Otolaryngology." No discussion.

Dr. G. Sluder, St. Louis, read a paper on "The Etiology, Diagnosis, Prognosis and Treatment of Sphenopalatine Ganglion Neuralgia." Discussed by Drs. H. W. Loeb, St. Louis; Corydon G. Dwight, Madison, Wis., and G. Sluder, St. Louis.

Dr. Voorhees presented a paper on "Conservative Surgery of the Nasal Septem, with Description of a 'Limited' Submucous Operation," which was read by the Secretary.

Dr. George W. MacKenzie, Philadelphia, read a paper on "Difficulties and Complications That May Arise During or After the Submucous Resection of the Septum."

These two papers were discussed by Drs. C. F. Welty, San Francisco; R. Bishop Canfield, Ann Arbor, Mich.; W. E. Casselberry, Chicago; Henry Bassett Lemere, Omaha; William L. Ballenger, Chicago; H. W. Loeb, St. Louis; Emil Mayer, New York; George Paul Marguis, Chicago; Corydon G. Dwight, Madison, Wis.; J. Holinger, Chicago; S. R. Boyce, Madison, Wis.; Francis Endeson, Boston; Samuel G. Higgins, Milwaukee, Wis.; Howard F. Pyfer, Norristown, Pa.; J. C. Beck, Chicago; James J. Pattee, Pueblo, Colo.; G. Sluder, St. Louis; C. Lester Hall, Kansas City, Mo.; J. A. Stucky, Lexington, Ky.; Margaret L. Noyes, Boston; Parsons, Grand Forks, N. Dak.; Emil Mayer, New York; C. W. Wilkowske, Chippewa Falls, Wis., and George W. MacKenzie, Philadelphia.

Wednesday, June 18—Morning

The Chairman, Dr. Robert Levy, Denver, called the attention of the Section to the death of Dr. E. L. Shurly, Detroit, who was chairman of the first meeting he ever attended. He said that it was entirely fitting that a committee be appointed to draft resolutions which should be spread on the records of the Section. He thought that it would be a good precedent to establish a permanent committee which should have for its object keeping track of the members. Theirs was a very large Section to-day. He advised having a standing committee which should report at subsequent meetings the deaths of members and which should give some expression which should go on their records and in their Transactions. He also called attention to the death of Dr. Patrick F. Gildea of Colorado Springs, Colo. To report on the death of Dr. E. L. Shurly he appointed Dr. Emil Mayer, New York, and Dr. W. E. Casselberry, Chicago. To report on the death of Dr. Gildea he appointed Dr. F. L. Dennis, Colorado Springs, Colo., and Dr. C. F. Welty, San Francisco.

Dr. Burt R. Shurly, Detroit, read the following letter from Dr. Thomas J. Harris, New York, Secretary of the American Laryngological, Rhinological and Otological Society.

> I beg herewith to transmit to you a copy of the report of our Special Committee on the Teaching of Otolaryngology to Postgraduates, together with the resolutions regarding the same as adopted at our May meeting in Washington by the American Laryngological, Rhinological and Otological Society. In accordance with the said resolution we have appointed Dr. D. J. Gibb Wishart of Toronto, Dr. Charles W. Richardson of Washington, and Dr. S. MacCuen Smith of Philadelphia, to represent this society, and trust that you will lay this communication before your Council at the earliest moment, so that if possible speedy action may be taken, and the larger committee be set to work this fall.

Dr. Emil Mayer, New York, read a paper on "Chronic Laryngitis."

Dr. J. C. Beck, Chicago, read a paper on "Diagnosis and Treatment of Syphilitic Laryngitis."

Dr. F. L. Dennis, Colorado Springs, Colo., read a paper on "Diagnosis and Treatment of Laryngeal Tuberculosis."

Dr. E. Fletcher Ingals, Chicago, presented a paper on "Diagnosis and Treatment of Paralysis of the Larynx," which was read by the Secretary.

Dr. Chevalier Jackson, Pittsburgh, Pa., read a paper on "The Differential Diagnosis and Treatment of Malignant Diseases of the Larynx."

These five papers were discussed by Drs. Thomas Hubbard, Toledo, Ohio; L. S. Peters, Silver City, N. Mex.; Michael P. Schuster, El Paso, Tex.; Howard F. Pyfer, Norristown, Pa.; C. F. Welty, San Francisco; J. Holinger, Chicago; Burt R. Shurley, Detroit; Elmer L. Kenyon, Chicago; Robert Levy, Denver; Emil Mayer, New York; J. C. Beck, Chicago, and F. L. Dennis, Colorado Springs, Colo.

Dr. A. M. Corwin, Chicago, read a paper on "Tonsillectomy by the Sluder Method." No discussion.

Dr. Emil Mayer, New York, presented the following report of the committee which was appointed to draw suitable resolutions on the death of Dr. E. L. Shurly:

In the death of Dr. E. L. Shurly of Detroit, this Section has lost one of its most consistent and stanch supporters. Those who had the honor of knowing him personally learned to love him for his many sterling traits. He was of most cheery disposition, always smilingly gracious, gentle and kind, a friend of the younger man, and a true type of a scientific physician, as his many valuable treatises and his text-book abundantly testify. He was devoted to his profession, and a great part of his life being given to the prevention of disease showed his great love for mankind. We shall miss our dear friend from our gatherings, but we trust that the inspiration of his manifold virtues and his life will be a stimulus to all of us.

This was signed by Dr. William E. Casselberry, Chicago, and Dr. Emil Mayer, New York.

WEDNESDAY, JUNE 18—AFTERNOON

Dr. C. D. Camp, Ann Arbor, Mich., read a paper on "Neurology in Relation to Diseases of the Nose, Throat and Ear."

Dr. W. R. Parker, Detroit, read a paper on "Ophthalmology in Relation to Diseases of the Nose, Throat and Ear."

These two papers were discussed by Drs. J. Holinger, Chicago; R. Bishop Canfield, Ann Arbor, Mich.; George E. Shambaugh, Chicago; Corydon G. Dwight, Madison, Wis.; H. W. Loeb, St. Louis; F. P. Emerson, Boston; C. F. Welty, San Francisco; George L. Richards, Fall River, Mass.; J. C. Beck, Chicago; William L. Ballenger, Chicago; Howard F. Pyfer, Norristown, Pa.; Henry Bassett Lemere, Omaha; G. Sluder, St. Louis; C. D. Camp, Ann Arbor, Mich., and W. R. Parker, Detroit.

The following were appointed on the Executive Committee: Drs. Chevalier Jackson, Pittsburgh, Pa.; H. W. Loeb, St. Louis, and George E. Shambaugh, Chicago.

THURSDAY, JUNE 19—MORNING

The following officers were elected: Chairman, Dr. Burt R. Shurly, Detroit; Vice-Chairman, Dr. L. W. Dean, Iowa City, Iowa; Secretary, Dr. F. P. Emerson, Boston; Delegate, Dr. Chevalier Jackson, Pittsburgh, Pa.; Alternate, Dr. George L. Richards, Fall River, Mass.; the following constitute the Executive Committee: Drs. Dunbar Roy, Atlanta, Ga.; G. E. Shambaugh, Chicago, and Robert Levy, Denver.

It was moved, seconded and carried that the Secretary be elected to serve a term of three consecutive years.

The adoption of the following report was seconded and carried:

> This Section and the medical profession in general have, in the recent death of Dr. P. F. Gildea, suffered the loss of a man of the sunniest disposition and the most optimistic outlook on life. Dr. Gildea was born on Feb. 15, 1865, in Worcester, Mass., and lived the best part of his professional life in Colorado Springs, where he was very much beloved, not only by his professional brethren but also by his many patients and hosts of friends. This Section mourns his untimely end and extends its heartfelt sympathy to his wife and family in their sad bereavement. Drs. Frank L. Dennis and C. F. Welty, committee.

It was moved, seconded and carried that the Chair appoint a committee of three who should keep the Section informed of any of its members who died. The Chairman said he would make these appointments later.

The Committee which was appointed to consider the education of specialists in laryngology, and which was to act with similar committees from other bodies interested in laryngology, desired to report at the next annual meeting. This was consented to.

Dr. Louis D. Green, San Francisco, presented a tonsil-snare and pillar knife.

Dr. J. C. Beck, Chicago, presented an anesthetic cage-mask adapted to the ear as an aid in surgical dressings.

Dr. R. E. Mercer, Detroit, presented an electric laryngoscope.

Dr. G. E. Shambaugh, Chicago, read a paper on "Chronic Obstructive Middle-Ear Deafness." Discussed by Drs. J. Holinger, Chicago; C. F. Welty, San Francisco; J. N. MacKenzie, Baltimore; George L. Richards, Fall River, Mass.; J. C. Beck, Chicago; Corydon G. Dwight, Madison, Wis., and G. E. Shambaugh, Chicago.

Dr. F. P. Emerson, Boston, read a paper on "Temperosphenoidal Abscess with General Meningeal Symptoms. Drainage Through the Cisterna Magna. Mastoid Operation. Recovery." Discussed by Drs. J. C. Beck, Chicago; G. E. Shambaugh, Chicago; J. N. MacKenzie, Baltimore; J. Holinger, Chicago; William L. Ballenger, Chicago; Burt R. Shurly, Detroit, and F. P. Emerson, Boston.

Dr. C. F. Welty, San Francisco, read a paper on "Statistical Report of Hearing Following the Radical Mastoid Operation. Tampon vs. Skin-Graft." Discussed by Drs. William L. Ballenger, Chicago; J. Holinger, Chicago; J. C. Beck, Chicago, and C. F. Welty, San Francisco.

Dr. Walter A. Wells, Washington, D. C., read a paper on "Methods of Measuring Auditory Acuity." Discussed by Drs. G. E. Shambaugh, Chicago, and Walter A. Wells, Washington, D. C.

Dr. George L. Richards, Fall River, Mass., read a paper on "Technic of Tonsillectomy."

Dr. B. R. Sheedy, New York, presented a paper on "The Results of Tonsillectomy under Local Anesthesia," which was read by Dr. Howard F. Pyfer, Norristown, Pa.

These two papers were discussed by Drs. W. H. Loeb, St. Louis; Howard F. Pyfer, Norristown, Pa.; William L. Ballenger, Chicago; Oscar Wilkinson, Washington, D. C.; John O. McReynolds, Dallas, Tex.; (?) Parsons, St. Paul, Minn.; Charles Franklin Adams, Trenton, N. J.; C. Armin Gundelach, St. Louis; C. F. Welty, San Francisco; G. Sluder, St. Louis; George L. Richards, Fall River, Mass., and A. M. Corwin, Chicago.

SECTION ON DISEASES OF CHILDREN

TUESDAY, JUNE 17—AFTERNOON

The meeting was called to order by the Chairman, Dr. Henry Dwight Chapin, New York, at 2:20 p. m.

Dr. Chapin read the Chairman's address, entitled "Radiographic Studies of the Intestines in Infants."

Dr. John Lovett Morse, Boston, Mass., read a paper entitled "The Use of the Roentgen Ray in the Diagnosis of Obscure Abdominal Conditions in Infants and Children."

Dr. L. R. DeBuys, New Orleans, read a paper entitled "The Use of the Roentgen Ray in Pyloric Obstruction."

These papers were discussed by Drs. Abraham Jacobi, New York; G. R. Pisek, New York; Rufus Cole, New York; A. W. Crane, Kalamazoo, Mich.; Henry Helmholz, Chicago; H. Lowenburg, Philadelphia; John Lovett Morse, Boston; L. R. De Buys, New Orleans, and Henry D. Chapin, New York.

Dr. A. L. Goodman, New York, read a paper entitled "Rupture of Mediastinal Lymph-Node into Bronchus." Discussed by Drs. Willy Meyer, New York; I. A. Abt, Chicago; A. W. Myers, Milwaukee, Wis.; C. F. Wahrer, Fort Madison, Iowa, and A. L. Goodman, New York.

Dr. Frank Spooner Churchill, Chicago, read a paper entitled "Report of a Case of Staphylococcus Meningitis in a Child." Discussed by Drs. H. M. McClanahan, Omaha; H. Lowenburg, Philadelphia; F. P. Gengenbach, Denver, and Frank S. Churchill, Chicago.

WEDNESDAY, JUNE 18—MORNING

The first paper was by Dr. Thomas C. McCleave, Berkeley, Cal., entitled "Acute Acid Intoxication in Children." Discussed by Drs. John Zahorsky, St. Louis; J. R. Snyder, Birmingham, Ala.; C. H. Johnston, Grand Rapids, Mich.; Granville D. Ryan, Des Moines, Iowa; Thomas B. Cooley, Detroit; I. A. Abt, Chicago; J. L. Morse, Boston; H. T. Price, Pittsburgh, Pa.; L. R. DeBuys, New Orleans; H. Lowenburg, Philadelphia, and T. C. McCleave, Berkeley, Cal.

Dr. Victor C. Vaughan, Ann Arbor, Mich., read a paper entitled "The Protein Poison and Its Relation to Disease." Discussed by Drs. John Zahorsky, St. Louis; Mary Strong, Omaha; C. H. Johnson, Grand Rapids; C. G. Grulee, Chicago; Louis Burckhardt, Indianapolis; C. F. Wahrer, Fort Madison, Iowa; H. W. Cheney, Chicago; George S. Cattermole, Boulder, Colo.; T. C. McCleave, Berkeley, Cal., and Victor C. Vaughan, Ann Arbor, Mich.

Dr. Clifford G. Grulee, Chicago, read a paper entitled "The Nature of Ileocolitis from an Etiologic Standpoint." Discussed by Drs. R. M. Smith, Boston; E. W. Mitchell, Cincinnati; J. L. Morse, Boston, and Clifford G. Grulee, Chicago.

Dr. I. A. Abt, Chicago, read a paper entitled "Nutritional Injuries Produced by Starch." Discussed by Drs. John Zahorsky, St. Louis; E. P. Gengenbach, Denver; F. W. Schultz, Minneapolis; Julius Hess, Chicago; L. D. Buckley, New York, and I. A. Abt, Chicago.

Wednesday, June 18—Afternoon

Dr. Walter L. Bierring, Des Moines, Iowa, read a paper by himself and Drs. V. L. Glomset and J. A. Goodrich, Des Moines, Iowa. Discussed by Drs. C. G. Grulee, Chicago; C. F. Wahrer, Fort Madison, Iowa; Mary Strong, Omaha; John Zahorsky, St. Louis, and W. L. Bierring, Des Moines, Iowa.

Dr. Thomas B. Cooley, Detroit, read a paper entitled "The Treatment of Hemorrhagic Conditions in Infancy and Childhood." Discussed by Drs. V. D. Lespinasse, Chicago; H. M. McClanahan, Omaha; Julius Hess, Chicago; Ogden M. Edwards, Pittsburgh; H. Lowenburg, Philadelphia; C. Brooks, Pittsburgh, Pa., and T. B. Cooley, Detroit.

Dr. Arthur E. Hertzler, Kansas City, Mo., read a paper entitled "Treatment of Inguinal Hernia in Children." Discussed by Dr. C. G. Buford, Chicago.

Dr. William Cavan Woolsey, Brooklyn, read a paper entitled "General Anesthesia in the Surgery of Childhood." No discussion.

Dr. Julius Parker Sedgwick, Minneapolis, read a paper entitled "Spasmophilia with Especial Reference to Familial Reactions and Repeated Absences." Discussed by Drs. A. C. Rogers, Faribault, Minn.; Mary Strong, Omaha, and John Zahorsky, St. Louis.

Dr. A. C. Rogers, Faribault, Minn., read a paper entitled "Desirability of Early Diagnosis of Mental Deficiency." Discussed by Drs. Mary Strong, Omaha; C. F. Wahrer, Fort Madison, Iowa, and A. C. Rogers, Faribault, Minn.

Thursday, June 19—Morning

The following officers were elected: Chairman, Dr. F. S. Churchill, Chicago; Vice-Chairman, Dr. L. R. DeBuys, New Orleans; Secretary, Dr. F. P. Gengenbach, Denver; Delegate, Dr. J. P. Sedgwick, Minneapolis.

Dr. Richard M. Smith, Boston, read a paper entitled "Vulvovaginitis in Children." Discussed by Drs. F. C. Neff, Kansas City, Mo.; H. M. McClanahan, Omaha; H. Lowenburg, Philadelphia; D. L. Richardson, Providence, R. I.; J. L. Hess, Chicago; C. F. Wahrer, Fort Madison, Iowa; John Zahorsky, St. Louis; H. D. Chapin, New York, and R. M. Smith, Boston.

Dr. John Zahorsky, St. Louis, read a paper entitled "Roseola Infantum." Discussed by Drs. F. P. Gengenbach, Denver; H. W. Cheney, Chicago, and John Zahorsky, St. Louis.

Dr. A. Sophian, Kansas City, Mo., read a paper entitled "Atypical Forms of Meningitis (Posterior Basic Meningitis; Aseptic Meningitis)." Discussed by Drs. J. L. Morse, Boston, and A. Sophian, Kansas City, Mo.

Dr. Julius H. Hess, Chicago, read a paper entitled "Leukocyte Counts in Epidemic Meningitis and Pneumonia." No discussion.

Dr. F. P. Gengenbach, Denver, read a paper entitled "Precocious Menstruation." No discussion.

Dr. H. M. McClanahan, Omaha, read a paper entitled "Clinical Report and Post-Mortem Findings in the Case of a Child with a Congenital Heart Disease, Dying from Acute Nephritis." Discussed by Drs. John Zahorsky, St. Louis; C. F. Wahrer, Fort Madison, Iowa; H. Lowenburg, Philadelphia, and H. M. McClanahan, Omaha.

Thursday, June 19—Afternoon

Dr. D. L. Richardson, Providence, R. I., read a paper entitled "The Hospital Management of Contagious Diseases." Discussed by Dr. H. E. Roberts, Minneapolis.

Miss Julia C. Lathrop, Washington, D. C., read a paper entitled "Federal Children's Bureau; the Law, the Organization, the Scope of Its Present Work." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa, and H. D. Chapin, New York.

Dr. H. Lowenburg, Philadelphia, read a paper entitled "The Etiology of Artificial Feeding; a Plea for the Study of Breast Milk Problems." Discussed by Drs. Rosenthal Edmondson, Grand Rapids, Mich.; John Zahorsky, St. Louis; C. F. Wahrer, Fort Madison, Iowa; C. F. Chapin, New York; H. W. Bancroft, Bancroft, Neb.; L. R. DeBuys, New Orleans; C. H. Johnson, Grand Rrapids, Mich.; A. C. Rogers, Faribault, Minn., and F. P. Gengenbach, Denver.

Friday, June 20—Morning

A joint meeting was held with the American Association of Medical Milk Commissions.

Meeting called to order by Dr. Ogden M. Edwards, Pittsburgh, Pa., President Association of Medical Milk Commission.

Dr. Otto Geier, Cincinnati, read a paper entitled "Report of the Milk Commission on the Relation of Bovine and Human Tuberculosis." No discussion.

Dr. T. C. McCleave, Berkeley, Cal., read a paper entitled "Certified Milk." Discussed by Drs. J. W. Van Derslice, Chicago; H. L. Coit, Newark, N. J.; John Zahorsky, St. Louis; C. H. Johnston, Grand Rapids, Mich.; T. C. McCleave, Berkeley, Cal.; Ogden M. Edwards, Pittsburgh, Pa.; Otto Geier, Cincinnati, and J. W. Van Derslice, Chicago; Messrs. Stephen Francisco, Newark, N. J., and W. E. Miller, Cincinnati.

Dr. Henry L. Coit, Newark, N. J., read a paper entitled, "The Efficiency of the Milk Commission, Graphically Illustrated." No discussion.

Dr. H. H. Harding, Urbana, Ill., read a paper entitled "The Effect of Barn Operations on the Germ Content of Milk." Discussed by Drs. C. H. Johnston, Grand Rapids, Mich.; T. C. McCleave, Berkeley, Cal.; John Zahorsky, St. Louis; J. W. Van Derslice, Chicago; Otto Geier, Cincinnati; H. A. Harding, Urbana, Ill.; H. L. Coit, Newark, N. J., and Professor Dowling, President Louisiana State Board of Health.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Tuesday, June 17—Afternoon

The Chairman, Dr. Ray L. Wilbur, San Francisco, called the meeting to order in Millard Hall, New Campus, University of Minnesota, at 2:09 p. m.

Mr. M. I. Wilbert, Washington, D. C., read the following communication:

> I have the honor to notify you that the following delegates to represent the American Pharmaceutical Association, at your meeting at Minneapolis, June 17-20, 1913, have been appointed: J. P. Remington, Chairman, Philadelphia; H. M. Whelpley, St. Louis; J. H. Beal, Scio, O.; H. H. Rusby, Newark, N. J.; Bernard Fantus, Chicago; L. F. Kebler, Washington, D. C.; G. M. Beringer, Camden, N. J.; Otto Raubenheimer, Brooklyn; Theo. J. Bradley, Boston; F. J. Wulling, Minneapolis.
>
> The delegates have been twice notified of their appointment and of the date of the meeting. Very truly yours, J. H. Beal, Secretary.

A motion was made and carried to extend the privileges of the floor to the members of the delegation from the American Pharmaceutical Association.

Dr. Wilbur then read the Chairman's address, "The Teaching of Therapeutics."

Dr. Torald Sollmann, Cleveland, read a paper entitled, "Yesterday, To-day and To-morrow: The Activities of the Council on Pharmacy and Chemistry." Discussed by Drs. F. E. Stewart, Philadelphia; B. Fantus, Chicago; F. J. Wulling, Minneapolis; Alexander S. von Mansfelde, Ashland, Neb.; Ralph St. J. Perry, Farmington, Minn.

Dr. Joseph P. Remington, Philadelphia, presented the address of the delegation from the American Pharmaceutical Association as follows:

"The American Pharmaceutical Association sends greetings to the American Medical Association and best wishes for a most successful meeting at Minneapolis. During the last three years the national organizations have been more closely brought together through Pharmacopeial revision, members from both organizations working in their several departments on the Ninth Revision.

"It was to be expected that differences of opinion would arise, and it is gratifying to know that during the three years of earnest discussion and official correspondence, personalities have been conspicuous through their absence. The principal debates have been on the question of scope, some of the medical members arguing for a more restricted list: others desire an extended list, but the majority of the members of the Revision Committee are undoubtedly in favor of adopting neither a restricted nor extended list but one which they believe will be satisfactory to the largest number of practitioners in America. It will be interesting to know that about 85 per cent. of the manuscript of the Ninth Revision is nearly finished and the work of getting it ready for the press will soon begin.

"The American Pharmaceutical Association has been very active through its branch organizations, and its own legislative committees in advancing legislation tending to control the extensive use of narcotics and in preventing as far as possible the further development of evil practices of unworthy members of both professions. It is sincerely hoped that our national bodies will continue to work in the future on lines which will draw both together and, ignoring small and unimportant details and differences, will stand shoulder to shoulder in advancing legislation which shall secure to suffering humanity the greatest uplift that is possible."

A motion was made by Dr. Torald Sollmann, Cleveland, that the Section request the House of Delegates of the American Medical Association to urge on the Committee of Revision of the Pharmacopeia of the United States that the selection of articles to be included be left to the Committee on Scope, in which the medical profession has a majority representation, rather than to the Executive Committee which represents mainly the pharmaceutical profession, and which has overridden half the changes advocated by the Commmittee on Scope." [The House concurred.]

Prof. W. A. Puckner, Chicago, read a paper on "The Quality of Drugs Sold to Dispensing Physicians." Discussed by Drs. B. Fantus, Chicago; Ralph St. J. Perry, Farmington, Minn.; Alexander S. von Mansfelde, Ashland, Neb.; F. J. Wulling, Minneapolis, and Prof. W. A. Puckner, Chicago.

A motion was made by Dr. B. Fantus, Chicago, that the American Medical Association advise its members against dispensing, excepting in cases of emergency or when the services of a properly qualified pharmacist are not available. This motion was not passed.

Mr. M. I. Wilbert, Washington, D. C., read a paper entitled, "Carelessness in the Pharmacy as a Reason for a Restricted Materia Medica." Discussed by Drs. Alexander S. von Mansfelde, Ashland, Neb.; J. P. Remington, Philadelphia; F. J. Wulling, Minneapolis; Torald Sollmann, Cleveland; A. J. Carlson, Chicago: Reid Hunt, Washington, D. C., and Prof. W. A. Puckner, Chicago.

A motion was made by Mr. M. I. Wilbert, Washington, D. C., and after discussion, was passed, that the Section on Pharmacology and Therapeutics requests the House of Delegates of the American Medical Association to bring to the attention of the proper federal and state authorities the fact that greater activity is needed in the enforcement of existing laws relating to drugs and medicines, and urge on them the need for more energetic and effective action in this direction. [The House concurred.]

Prof. John A. Handy, Minneapolis, read a paper entitled, "The Fundamental Principles of Biochemistry; Their Application in the Study of Colloidal Minerals and Mineral Salts in True Organic Form and Their Use in Medicine." Discussed by Drs. Alexander S. von Mansfelde, Ashland, Neb.; F. E. Stewart, Philadelphia, and Prof. John A. Handy, Minneapolis.

Mr. A. J. Carlson, Chicago, read a paper on "The Solubility of White Leads in Human Gastric Juice and Its Bearing on the Hygiene of the Lead Industries." Discussed by Dr. E. D. Brown, Minneapolis; Mr. M. I. Wilbert, Washington, D. C.; Drs. Alexander S. von Mansfelde, Ashland, Neb., and A. J. Carlson, Chicago.

WEDNESDAY, JUNE 18—MORNING

Dr. A. C. Crawford, Palo Alto, Cal., "The Physiologic Testing of Ergot" (read by Dr. E. D. Brown, Minneapolis). No discussion.

Dr. Frank Billings, Chicago, read a paper entitled, "Internal Hemorrhages: Can We Control Them?" Discussed by Drs. Alexander S. von Mansfelde, Ashland, Neb.; L. A. Levison, Toledo, Ohio: H. L. Staples, Toledo, Ohio; Ray L. Wilbur, San Francisco, and Dr. Frank Billings, Chicago.

Dr. A. D. Hirschfelder, Baltimore, read a paper entitled, "Diuretics in Cardiovascular Disease." Discussed by Drs. Philip S. Roy, Washington, D. C.; B. Fantus, Chicago; Frank Billings, Chicago; Robert A. Hatcher, New York, and A. D Hirschfelder, Baltimore.

Dr. Henry A. Christian, Boston, read a paper entitled, "The Value of Diuretic Drugs in Acute Experimental Nephritis." Discussed by Drs. A. D. Hirschfelder, Baltimore, and Henry A Christian, Boston.

Dr. Charles Lyman Greene, Minneapolis, read a paper entitled, "Treatment of Anginal Pains." Discussed by Drs Frank Billings, Chicago; A. D. Hirschfelder, Baltimore; Philip S. Roy, Washington, D. C.; W. H. Witt, Nashville, Tenn.; B Fantus, Chicago; L. F. Ross, Richmond, Ind.; Ray L. Wilbur San Francisco, and Charles Lyman Greene, Minneapolis.

Drs. Kennon Dunham and Charles S. Rockhill, Cincinnati, presented a paper entitled, "Therapeutic Pneumothorax as a Palliative Measure: A Report of Twenty Cases from the Cincinnati Tuberculosis Hospital." Disscussed by Drs. Charles L. Minor, Asheville, N. C.; C. K. Boys, Wei-hsien, China, and Kennon Dunham, Cincinnati.

WEDNESDAY, JUNE 18—AFTERNOON

A joint meeting was held with the Section on Practice of Medicine. For the papers read, which constituted a Symposium on Serums and Vaccines, see the minutes of that Section

THURSDAY, JUNE 19—MORNING

The following officers were elected: Chairman, Dr. J. F. Anderson, Washington, D. C.; Vice-Chairman, Dr. R. A. Hatcher, New York; Secretary, Mr. M. I. Wilbert, Washington, D. C.; Delegate, Dr. Ray L. Wilbur, San Francisco, and Altenate, Dr. Reid Hunt, Washington, D. C., thus making the Executive Committee consist of Drs. Lawrence Litchfield, Pittsburgh; Torald Sollmann, Cleveland, and Ray L. Wilbur, San Francisco.

Dr. N. S. Davis, Chicago, read a paper on "Non-Surgical Treatment of Cirrhosis of the Liver." Discussed by Drs. E. D. Brown, Minneapolis; A. S. von Mansfelde, Ashland, Neb.; Ray L. Wilbur, San Francisco, and N. S. Davis, Chicago.

Dr. Joseph A. Capps, Chicago, read a paper entitled, "Venous Blood-Pressure as Influenced by the Drugs Employed in Cardiovascular Therapy." Discussed by Drs. Joseph L. Miller, Chicago; Clyde Brooks, Pittsburgh; Torald Sollmann, Cleveland; A. S. von Mansfelde, Ashland, Neb., and Joseph A. Capps, Chicago.

Dr. Robert A. Hatcher, New York, read a paper entitled, "The Elimination of the Digitalis Bodies." Discussed by Drs. Torald Sollmann, Cleveland; E. D. Brown, Minneapolis, and R. A. Hatcher, New York.

Dr. Cary Eggleston, New York, sent a paper entitled, "Clinical Observations on the Emetic Action of Digitalis," which was read by Dr. R. A. Hatcher, New York. Discussed by Drs. Clyde Brooks, Pittsburgh, and R. A. Hatcher, New York.

Dr. B. F. McGrath of the Mayo Clinic, Rochester, Minn., read a paper entitled, "Various Methods of Administering Ether. Experimental Observations." Discussed by Drs. Torald Sollmann, Cleveland; A. S. von Mansfelde, Ashland, Neb.; Clyde Brooks, Pittsburgh, and B. F. McGrath, Rochester, Minn.

Drs. Charles W. Greene and Theophile T. Kruse, Columbia, Mo., presented a paper entitled, "The Bromid Question Experimentally Considered." No discussion.

THURSDAY, JUNE 19—AFTERNOON

The following papers were read as a Symposium on Physical Therapeutics and discussed separately:

Dr. Curran Pope, Louisville, Ky., read a paper on "Hydrotherapy in Nervous Fatigue." Discussed by Drs. G. Betton Massey, Philadelphia, and Curran Pope, Louisville, Ky.

Dr. H. M. Hallock, Hot Springs, Ark., had prepared a paper entitled, "Some Aspects of Hydrotherapy in the United States," which was read by Dr. Ray L. Wilbur, San Francisco, owing to the death of Dr. Hallock on May 19, 1913. Discussed by Drs. Ray L. Wilbur, San Francisco; Mr. M. I. Wilbert, Washington, D. C.; W. H. Witt, Nashville, Tenn.; C. F. Menninger, Topeka, Kan., and Kennon Dunham, Cincinnati.

Dr. L. G. Rowntree, Baltimore, presented a paper entitled, "Radium in Internal Medicine," which was read by Dr. Frank Hinman, Baltimore. Discussed by Drs. Ray L. Wilbur, San Francisco; R. Robinson, Danielson, Conn.; G. E. Pfahler, Philadelphia; William H. Mercur, Pittsburgh, Pa.; Charles Stewart, Salt Lake City, and W. H. Witt, Nashville, Tenn.

The following papers were read as a Symposium on Roentgen-Ray Therapy:

Dr. Sidney Lange, Cincinnati, read a paper on "Rational Roentgenotherapy by Measured Doses."

Dr. E. D. Brown, Minneapolis, took the chair at this juncture and acted as Chairman until the meeting adjourned.

Dr. W. A. Pusey, Chicago, read a paper entitled, "What Can Be Done in Cancer with Roentgen Rays?"

Dr. G. E. Pfahler, Philadelphia, read a paper entitled, "The Healing Process of Osteosarcoma under the Influence of the X-Rays." Discussed by Drs. L. T. Le Wald, New York; G. Betton Massey, Philadelphia; Kennon Dunham, Cincinnati; J. M. King, Nashville, Tenn.; A. M. Cole, Indianapolis, Ind; W. A. Pusey, Chicago; G. E. Pfahler, Philadelphia, and Sidney Lange, Cincinnati.

SECTION ON PATHOLOGY AND PHYSIOLOGY

TUESDAY, JUNE 17—AFTERNOON

The meeting was called to order by the Chairman, Dr. A. W. Hewlett, Ann Arbor, Mich., at 2:10 p. m.

The Secretary, Dr. William Ophüls, San Francisco, not being present, Dr. H. E. Robertson, Minneapolis, was made Temporary Secretary.

Dr. A. W. Hewlett, Ann Arbor, Mich., read the Chairman's address, entitled "Pathologic Physiology in Relation to Internal Medicine." No discussion.

The following papers were read as a Symposium on Diplococcus and Streptococcus Infections:

Dr. J. A. Capps, Chicago: "Epidemics of Streptococcus Sore Throat. A Consideration of Their Clinical Features and Their Etiology."

Dr. D. J. Davis, Chicago: "The Relation of Streptococci to Arthritis."

Dr. E. C. Rosenow, Chicago: "Studies on Rheumatism, Articular and Muscular."

Drs. A. R. Dochez and L. P. Gillespie, New York: "A Biologic Classification of Pneumococci by Means of Immunity Reactions and the Relation of Certain Varieties to the Clinical Course of Lobar Pneumonia in Man."

These four papers were discussed by Drs. Frank Billings, Chicago; G. L. Richards, Fall River, Mass.; Henry Albert, Iowa City, Iowa; Rufus Cole, New York; E. T. Bell, Minneapolis; Norman Bridge, Los Angeles; Hubert Jermain, Milwaukee, Wis.; J. A. Capps, Chicago; D. J. Davis, Chicago, and E. C. Rosenow, Chicago.

WEDNESDAY, JUNE 18—MORNING

Mr. A. J. Carlson, Chicago, read a paper on "Some New Observations on the Physiology of the Stomach in Man and in Dogs."

It was moved by Dr. W. B. Cannon, Boston, that Mr. Carlson be given the fifteen minutes allowed for the reading of a paper on "Movements of the Empty Stomach in Dogs during the Course of Pancreatic Diabetes" by Dr. A. B. Luckhardt, Chicago, in the absence of Dr. Luckhardt, Mr. Carlson to finish his own paper and give a summary of Dr. Luckhardt's paper at the end. This motion was seconded and carried.

These two papers were discussed by Dr. W. B. Cannon, Boston, and Mr. A. J. Carlson, Chicago.

Drs. Charles W. Greene and W. F. Skaer, Columbia, Mo., read a paper on "Evidences of Fat Absorption by the Mucosa of the Mammalian Stomach." Discussed by Mr. A. J. Carlson, Chicago, and Drs. E. T. Bell, Minneapolis, and Charles W. Greene, Columbia, Mo.

Dr. Lewis Gregory Cole, New York, read a paper on "The Physiology of the Pylorus, Pilleus Ventriculi and Duodenum, as Observed Radiographically." Discussed by Drs. W. B. Cannon, Boston; A. J. Carlson, Chicago; J. T. Case, Battle Creek, Mich.; E. W. Caldwell, New York; F. W. Pottenger, Los Angeles, and Lewis Gregory Cole, New York.

Drs. Frederic S. Lee, New York, and A. E. Guenther, Lincoln, Neb., read a paper on "Some Physiologic Properties of Diaphragm Muscle." Discussed by Mr. A. J. Carlson, Chicago; Drs. C. Brooks, Pittsburgh, and A. E. Guenther, Lincoln, Neb.

Dr. J. H. Agnew, Ann Arbor, Mich., read a paper on "Comparative Study of Some Functional Renal Tests." Discussed by Dr. A. W. Hewlett, Ann Arbor, Mich.

Dr. H. B. Schmidt, Ann Arbor, Mich., read a paper on "A Clinical Study of Hypercholesteremia." No discussion.

WEDNESDAY, JUNE 18—AFTERNOON

Dr. G. Wilse Robinson, Kansas City, Mo., read a paper on "Overresponse to Affective Stimuli from Stationary Cortical Lesions. Report of a Case." No discussion.

Dr. D. H. Dolley, Columbia, Mo., read a paper on "The Relation between Functional Activity and Depression in Nerve Cells from Anatomic Analysis." No discussion.

Dr. W. P. Larson, Minneapolis, read a paper on "Report of a Case in which the Bacillus Fusiformis was Isolated from the Blood." Discussed by Drs. H. E. Robertson, Minneapolis, and W. P. Larson, Minneapolis.

Dr. Lorena M. Breed, Pomona, Cal., read a paper on "Further Observations with a Saccharomycete." Discussed by Drs. A. L. Grover, Iowa City, Iowa, and Lorena M. Breed, Pomona, Cal.

Dr. Hewlett appointed Drs. H. Gideon Wells, Chicago; W. B. Cannon, Boston, and F. H. Scott, Minneapolis, as members of the Nominating Committee, to present nominations of officers.

THURSDAY, JUNE 19—MORNING

The chairman of the Nominating Committee reported the following nominations of officers of the Section for the ensuing year: Chairman, Dr. William Ophüls, San Francisco; Vice-Chairman, Dr. L. B. Wilson, Rochester, Minn.; Secretary Mr. A. J. Carlson, Chicago; thus making the Executive Committee consist of Drs. Yandell Henderson, New Haven, Conn.; Leo Loeb, St. Louis, Mo., and A. W. Hewlett, Ann Arbor, Mich.; Delegate, Dr. Richard M. Pearce, Philadelphia; Alternate, Dr. E. C. Rosenow, Chicago.

It was moved and seconded that those nominated be elected. The motion was carried.

In the absence of Drs. Yandell Henderson, New Haven, Conn., and Leo Loeb, St. Louis, the Chairman appointed Drs. H. Gideon Wells, Chicago, and E. T. Bell, Minneapolis, as members of the Executive Committee for the approval of papers.

Drs. Frank P. Underhill, New Haven, Conn.; Samuel Goldsmith, New Haven, Conn., and H. Gideon Wells, Chicago, read a paper on "Studies on Experimental Nephritis Produced by Tartrates." Discussed by Drs. F. H. Scott, Minneapolis, and H. Gideon Wells, Chicago.

The following papers were read as a Symposium on The Thyroid Exophthalmic Goiter:

Dr. L. B. Wilson, Rochester, Minn.: "The Relation of the Pathology and the Clinical Symptoms of Simple and Exophthalmic Goiter."

Dr. E. V. Smith, Rochester, Minn.: "The Iodin Content of the Human Thyroid."

Dr. A. H. Sanford, Rochester, Minn.: "A Comparative Study of the Effects on Blood-Pressure of Goiter Extracts, Goiter Serum and Other Substances."

These three papers were discussed by Drs. F. H. Scott, Minneapolis; A. W. Hewlett, Ann Arbor, Mich.; L. B. Wilson, Rochester, Minn., and A. H. Sanford, Rochester, Minn.

Dr. E. T. Bell, Minneapolis, read a paper on "Cloudy Swelling." Discussed by Drs. H. Gideon Wells, Chicago, and E. T. Bell, Minneapolis.

Dr. H. E. Robertson, Minneapolis, read a paper on "Local Lesions following Intramuscular Injections of Salvarsan and Neosalvarsan." No discussion.

Dr. A. L. Grover, Iowa City, Iowa, read a paper on "Experimental Cirrhosis of the Liver." Discussed by Drs. Henry Albert, Iowa City, Iowa; H. E. Robertson, Minneapolis, and A. L. Grover, Iowa City, Iowa.

Drs. E. E. Southard and M. M. Canavan, Boston, read a paper on "The Bacteriology of Aortic Lymph-Nodes." Discussed by Drs. H. E. Robertson, Minneapolis; Henry Albert, Iowa City, Iowa, and E. E. Southard, Boston.

Drs. Henry H. Janeway and Ephraim M. Ewing, New York, read a paper on "The Relation of Acapnia to Shock." Discussed by Drs. H. E. Parsons, Denver; W. M. Boothby, Boston, and Henry H. Janeway, New York.

SECTION ON DERMATOLOGY

Tuesday, June 17—Afternoon

The Chairman, Dr. Joseph Zeisler, Chicago, called the meeting to order at 2:15 p. m. in Folwell Hall. He said that he was pleased to see such a good attendance, and expressed the hope that the profit and pleasure of the meeting would be enhanced by a free discussion of the papers.

Dr. John Butler, Minneapolis, invited the members to a banquet at the Country Club at 7:30 p. m., and said that automobiles for their transportation to the club had been provided.

Dr. Zeisler then read the Chairman's address, entitled "Our Tendency to Fads."

The chairman stated that before proceeding further with the scientific program, he would appoint a Nominating Committee.

Dr. M. L. Heidingsfeld, Cincinnati, moved that the nominations be made from the floor on the day set apart for the election of officers.

Dr. William A. Pusey, Chicago, offered as a substitute motion that the Chairman appoint the Nominating Committee.

Dr. H. R. Varney, Detroit, in seconding this motion, said that for many years it had been the usual custom for the Chairman to appoint this committee. The motion was thereupon carried.

The Chairman announced the following to act as a Nominating Committee: Drs. F. O. Foerster, Milwaukee, Chairman; M. L. Ravitch, Louisville, and H. G. Irvine, Minneapolis. The committee was asked to make its recommendations on Thursday morning.

Dr. J. B. Kessler, Iowa City, read a paper on "Two Cases of Pemphigus Foliaceus." Discussed by Drs. Alfred Schalek, Omaha; Richard L. Sutton, Kansas City, Mo.; W. A. Pusey, Chicago; Howard Fox, New York; H. H. Hazen, Washington, D. C.; M. Ravogli, Cincinnati; Isadore Dyer, New Orleans, and J. B. Kessler, Iowa City.

Dr. H. H. Hazen, Washington, D. C., read a paper on "An Anomalous Case of White-Spot Disease." Discussed by Drs. A. Ravogli, Cincinnati, and H. H. Hazen, Washington, D. C.

Dr. Frank E. Simpson, Chicago, read a paper on "Radium in Skin Diseases." Discussed by Drs. M. L. Heidingsfeld, Cincinnati; M. L. Ravitch, Louisville; Joseph Zeisler, Chicago; Fred Wise, New York; Alfred Schalek, Omaha; H. R. Varney, Detroit, and Frank E. Simpson, Chicago.

Dr. George M. MacKee, New York, read a paper on "The Massive Dose Roentgen-Ray Method in the Treatment of Skin Diseases." Discussed by Drs. Everett S. Lain, Oklahoma, Okla., and George M. MacKee, New York.

Dr. M. L. Heidingsfeld, Cincinnati, read a paper on "Neuromas of the Skin" (with lantern-slide demonstration). Discussed by Dr. Howard Fox, New York.

Dr. Fred Wise, New York, read a paper on "Angioma Serpiginosum (Infective Angioma of Hutchinson) with Report of a Very Extensive Case." Discussed by Drs. Joseph Zeisler, Chicago; George M. MacKee, New York; Howard Fox, New York, and Fred Wise, New York.

Wednesday, June 18—Morning

Drs. S. E. Sweitzer, Minneapolis; H. G. Irvine, Minneapolis; Charles D. Freeman, St. Paul; C. A. Boreen, Minneapolis, and George P. Crume, Minneapolis, presented a number of clinical cases which were discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Ernest D. Chipman, San Francisco; M. L. Ravitch, Louisville, Ky.; H. G. Irvine, Minneapolis; Charle D. Freeman, St. Paul; S. E. Sweitzer, Minneapolis; Alfred Schalek, Omaha; M. L. Heidingsfeld, Cincinnati; Joseph Zeisler, Chicago; David Lieberthal, Chicago; J. C. Elliott King, Portland, Ore.; Isadore Dyer, New Orleans, and Howard Fox, New York.

Dr. A. Ravogli, Cincinnati, read a paper on "Salvarsan and Profeta's Law." Discussed by Drs. Alfred Schalek, Omaha; M. L. Heidingsfeld, Cincinnati, and A. Ravogli, Cincinnati.

Drs. M. F. Engman, Rudolph Buhman, Robert H. Davis and F. D. Gorham, St. Louis, presented a joint paper on "A Study of the Spinal Fluid in One Hundred Cases of Syphilis." This was read by Dr. Rudolph Buhman and was discussed by Drs. F. G. Harris, Chicago; David Lieberthal, Chicago; H. G. Irvine, Minneapolis; M. L. Heidingsfeld, Cincinnati; H. H. Hazen, Washington, D. C., and Rudolph Buhman, St. Louis.

Drs. H. R. Varney and F. W. Baeslack, Detroit, read a paper on "Comparative Study of Antigens for the Wassermann Reaction." This was discussed by Drs. Howard Fox, New York; J. Frank Waugh, Chicago; M. L. Heidingsfeld, Cincinnati; Rudolph Buhman, St. Louis; H. R. Varney, Detroit, and F. W. Baeslack, Detroit.

Dr. Richard L. Sutton, Kansas City, Mo., read a paper on "The Histopathology of Pompholyx." Discusssed by Drs. Joseph Zeisler, Chicago; Isadore Dyer, New Orleans; W. A. Pusey, Chicago; Frank E. Simpson, Chicago; M. L. Ravitch, Louisville, Ky.; K. A. Zurawski, Chicago; Everett S. Lain, Oklahoma, Okla., and Richard L. Sutton, Kansas City, Mo.

Dr. Alfred Schalek, Omaha, read a paper on "Cutaneous Affections of Childhood." Discussed by Drs. W. A. Pusey, Chicago; David Lieberthal, Chicago; Burnside Foster, St. Paul; Everett S. Lain, Oklahoma, Okla.; M. L. Ravitch, Louisville, Ky.; K. A. Zurawski, Chicago, and Alfred Schalek, Omaha.

Wednesday, June 18—Afternoon

Dr. M. L. Ravitch, Louisville, read a paper on "Empiricism in Dermatologic Therapeutics." Discussed by Dr. A. Ravogli, Cincinnati.

Dr. Everett S. Lain, Oklahoma, Okla., read a paper on "A Study of Skin Diseases Among the Indians of Oklahoma." Discussed by Drs. Howard Fox, New York; M. L. Ravitch, Louisville; Ernest D. Chipman, San Francisco; A. J. Markley, Denver; Isadore Dyer, New Orleans; M. L. Heidingsfeld, Cincinnati, and Everett S. Lain, Oklahoma, Okla.

Dr. Ernest Dwight Chipman, San Francisco, read a paper on "The Newer Cutaneous Mycoses." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; A. Ravogli, Cincinnati; Arthur H. Schwartz, Duluth, Minn.; Joseph Zeisler, Chicago; H. E. Menage, New Orleans; Ernest D. Chipman, San Francisco, and David Lieberthal, Chicago.

Dr. A. J. Markley, Denver, read a paper on "Primary Sarcoma of the Lower Lip." Discussed by Drs. M. L. Heidingsfeld, Cincinnati, and A. J. Markley, Denver.

Thursday, June 19—Morning

The following officers were elected for the ensuing year: Chairman, Dr. Richard L. Sutton, Kansas City, Mo.; Vice-Chairman, Dr. J. B. Kessler, Iowa City, Iowa; Secretary, Dr. Howard Fox, New York; Delegate, Dr. William A. Pusey, Chicago; Alternate, Dr. Isadore Dyer, New Orleans.

Drs. Charles D. Freeman, St. Paul; Burnside Foster, St. Paul; S. E. Sweitzer, Minneapolis, and John Butler, Minneapolis, presented a number of patients. These cases were discussed by Drs. M. L. Heidingsfeld, Cincinnati; A. Ravogli, Cincinnati; Howard Fox, New York; Joseph Zeisler, Chicago; W. A. Pusey, Chicago; Charles D. Freeman, St. Paul; M. L. Ravitch, Louisville, Ky.; H. G. Irvine, Minneapolis; Burnside Foster, St. Paul; Isadore Dyer, New Orleans; H. E. Menage, New Orleans, and David Lieberthal, Chicago.

The Chairman spoke of the interest evoked by this clinical demonstration, and a vote of thanks was extended to the members of Minneapolis and St. Paul for their kindness in having these patients in readiness and bringing them to the meeting for inspection and discussion

Dr. Isadore Dyer, New Orleans, offered a resolution that any member of the Section on Dermatology who applies for space on the program of that Section and allows his name and the title of his paper to be published thereon, and then fails to be present at the meeting or to send a satisfactory excuse for his absence, shall be debarred from the program for two successive years thereafter; and any member who absents himself for two successive years after allowing the name and title of his paper to be published, with or without an excuse, shall be debarred for five years.

This resolution was carried, and the Secretary was requested to transmit a copy to the House of Delegates through the proper representative of the Section. (This failed to reach the House of Delegates.)

Dr. Burnside Foster, St. Paul, read a paper on "Relation of Diabetes to Various Dermatoses." Discussed by Drs. John M. Armstrong, St. Paul; Ernest D. Chipman, San Francisco; M. L. Heidingsfeld, Cincinnati; K. A. Zurawski, Chicago; H. E. Menage, New Orleans; Everett S. Lain, Oklahoma, Okla., and Burnside Foster, St. Paul.

Dr. H. G. Irvine, Minneapolis, read a paper on "Idiopathic Atrophy of the Skin, with Report of a Case" and presentation of the patient. Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; M. L. Heidingsfeld, Cincinnati; W. A. Pusey, Chicago, and H. G. Irvine, Minneapolis.

Dr. Howard Fox, New York, read a paper on "Mycosis Fungoides Following Psoriasis." Discussed by Drs. Joseph Zeisler, Chicago; C. A. Boreen, Minneapolis; O. H. Foerster, Milwaukee; Frank E. Simpson, Chicago, and H. H. Hazen, Washington, D. C.

The Secretary read a communication from Dr. Alexander R. Craig, the Secretary of the Association, stating that at the meeting of the House of Delegates yesterday afternoon the House adopted the recommendation of the Reference Committe on Reports of Officers regarding the advisability of having the various Sections elect their secretaries for a term of more than one year.

Dr. Joseph Zeisler, the retiring Chairman, said that without unfairness he believed this concluded the most successful session that the Section on Dermatology had ever enjoyed in the history of the American Medical Association. The sessions were far better attended, and they had succeeded in introducing a very important feature, namely, the presentation of clinical cases. Furthermore, the discussion of the papers had been interesting and strictly to the point, without verbosity or divergence. The Section was now doing real scientific dermatologic work. It had outgrown its baby shoes and was now able to take rank with other scientific bodies. In closing his remarks, Dr. Zeisler congratulated the Section on having chosen as his successor a man who was so well worthy of the dignity of the position.

Dr. Richard L. Sutton, Kansas City, Mo., the newly elected Chairman, thanked the members for the honor they had conferred on him, and expressed the hope that the future work of the Section would prove the wisdom of their choice.

A vote of thanks was extended to the retiring Chairman of the Section, and also to the Secretary for their efficient services in connection with this meeting. A vote of thanks was also extended to the local members of the Section in Minneapolis and St. Paul for their efforts to make the meeting a success.

Adjourned.

SECTION ON OPHTHALMOLOGY

TUESDAY, JUNE 17—AFTERNOON

The Section was called to order by the Chairman, Dr. Hiram Woods, Baltimore, in the Law Building, University of Minnesota, Minneapolis.

Dr. Charles N. Spratt presented to the Section a case of buphthalmos operated on by the Elliott trephine method, and also a case of anophthalmos in a child belonging to the same family.

The Chairman announced that in the absence of Dr. W. C. Posey, member of the Executive Committee, Dr. Casey Wood, Chicago, would be appointed to serve in his stead for the session.

The Chairman, Dr. Hiram Woods, Baltimore, then read the Chairman's Address.

Dr. Walter B. Lancaster, Boston, read a paper on "Physiologic Optics the Basis for Teaching Clinical Ophthalmology." Discussed by Drs. Frank C. Todd, Minneapolis; Edward Jackson, Denver; S. D. Risley, Philadelphia; Lucien Howe, Buffalo, N. Y.; A. Edward Davis, New York; Frank Allport, Chicago; George H. Price, Nashville, Tenn.; Casey Wood, Chicago; Robert Sattler, Cincinnati, and Walter B. Lancaster, Boston.

Dr. Robert Sattler, Cincinnati, read a paper on "Some Modern Viewpoints with Regard to Glaucoma."

Dr. Mark J. Schoenberg, New York, read a paper on "Experimental Study of Intra-Ocular Pressure and Ocular Drainage."

Dr. William Zentmayer, Philadelphia, read a paper on "Hydrophthalmos. With a Histologic Report of Two Cases, One of Which Presented a Congenital Coloboma."

These three papers, on motion of Dr. Casey Wood, were discussed together by Drs. Lewis H. Taylor, Wilkes-Barre, Pa.; Emmet L. Jones, Cumberland, Md.; Adolf Alt, St. Louis; L. Webster Fox, Philadelphia; J. O. McReynolds, Dallas, Tex.; Allen Greenwood, Boston; Walter R. Parker, Detroit; S. D. Risley, Philadelphia; Lucien Howe, Buffalo, N. Y.; G. C. Savage, Nashville, Tenn.; J. S. Wyler, Cincinnati; Oscar Wilkinson, Washington, D. C.; W. H. Wilder, Chicago; Edward Jackson, Denver; Charles N. Spratt, Minneapolis; Robert Sattler, Cincinnati; Mark J. Schoenberg, New York, and William Zentmayer, Philadelphia.

Dr. Edward Jackson, Denver, moved that the recommendations of the Chairman's address be referred to the Executive Committee to consider and report what action the Section should take at the executive session. Carried.

WEDNESDAY, JUNE 18—MORNING

Dr. William E. Shahan, St. Louis, read a paper on "Equivalent Values in Spectacle Lenses." He announced that some new discoveries made it necessary to add considerable to his paper, and he wished to present it as the paper read at the session. Discussed by Drs. W. R. Murray, Minneapolis; F. Park Lewis, Buffalo, N. Y.; Walter Baer Weidler, New York; George H. Price, Nashville, Tenn.; J. S. Lichtenberg, Kansas City, Mo.; John A. Donovan, Butte, Mont.; Walter B. Lancaster, Boston, and W. E. Shahan, St. Louis.

The following papers were read as a symposium on Trachoma:

Dr. J. W. Schereschewsky, Washington, D. C., could not be present and his paper on "Trachoma Among the Indians" was read by Dr. J. W. Kerr, Washington, D. C.

Dr. John McMullen, Washington, D. C.: "Trachoma, Its Prevalence and Control Among Immigrants."

Dr. J. A. Stucky, Lexington, Ky.: "Trachoma Among the Mountaineers of Eastern Kentucky. Illustrated by Lantern-Slides."

The papers of this symposium were discussed by Drs. Edgar S. Thompson, New York; L. Webster Fox, Philadelphia; F. Park Lewis, Buffalo, N. Y.; S. D. Risley, Philadelphia; G. E. Seaman, Milwaukee, Wis.; William Zentmayer, Philadelphia; Lucien Howe, Buffalo, N. Y.; Meyer Wiener, St. Louis; Edward Jackson, Denver; Frank Allport, Chicago; J. S. Lichtenberg, Kansas City, Mo.; H. Copley Greene, Boston; John McMullen, Washington, D. C.; John W. Kerr, Washington, D. C., and J. A. Stucky, Lexington, Ky.

Dr. Lucien Howe, Buffalo, presented a model of an instrument described as a wing test for heterophoria, including cyclophoria. He explained that the instrument was first suggested by Maddox, who made a rough model like the one presented, but did not describe it. The model was brought to Buffalo by Dr. J. C. Clement. The instrument consisted of a stereoscopic frame, having aluminum wings on the shaft between the lenses and the objective, which consisted of a card with numerals and an arrow pointing to the line of numbers.

Dr. J. S. Lichtenberg, Kansas City, Mo., presented a modification of the scleral trephine having a needle or point by which the instrument might be fixed on the sclera in getting it started. A point in the operation is, after having dissected the conjunctiva back, to curet all tissue away down to the sclera before starting the trephine.

Dr. Adolph Alt, St. Louis, Mo., exhibited with the projection microscopic slides showing holes in the macula.

Dr. Walter Baer Weidler, New York, showed four slides of tissue removed from a case of blepharochalasis.

Dr. Edgar S. Thomson, New York, exhibited slides of a sarcoma of the chorioidal type, in which case there had been a rupture of the eyeball with tremendous hemorrhage.

Dr. George S. Derby, Boston, showed slides prepared from Dr. Verhoeff's case of Parinaud's conjunctivitis; also sections of a tumor of the lacrimal sac from a patient 35 years old. It was found to be made up largely of plasma cells with a large amount of hyaline degeneration. It was a plasmona or pseudoplasmona, of which there are only a few instances in the literature.

Wednesday, June 18—Afternoon

Dr. George S. Derby, Boston, announced that the microscopic slide of the specimen from Dr. Verhoeff's case of Parinaud's conjunctivitis showing the organism found by Dr. Verhoeff was under the microscope in the room and could be examined by the members. Dr. Verhoeff thinks the organism is a leptothrix. It stains by a modified Gram stain and is found in the spots of necrosis.

Dr. Lucien Howe, Buffalo, N. Y., gave an exhibition of the delicacy of measurements of temperature with the galvanometer. Variations of 1/500 to 1/10,000 of a degree Centigrade can be measured.

Dr. William H. Wilder, Chicago, read a paper on "Metastatic Ophthalmia. Report of Three Cases, One of which Resulted in Recovery of Vision." Discussed by Drs. Oscar Wilkinson, Washington, D. C.; Allen Greenwood, Boston; Casey Wood, Chicago; Edward Jackson, Denver; Adolf Alt, St. Louis; and W. H. Wilder, Chicago.

Dr. A. Edward Davis, New York, read a paper on "The Diagnostic and Therapeutic Uses of Tuberculin in Ocular Diseases, with a Review of Some of the Claims Made for It."

On motion of Dr. A. Greenwood, Boston, and at the request of Dr. Will Walter, Chicago, the next paper was read and the two discussed together.

Dr. Will Walter, Chicago, read a paper on "Phlyctenular Ophthalmia and Episcleritis. A Study of the Bearing of the Newer Research on Their Etiology as the Basis of a Scientific Therapy."

These two papers were discussed by Drs. W. E. Gamble, Chicago; George S. Derby, Boston; Charles N. Spratt, Minneapolis; Albert E. Bulson, Jr., Ft. Wayne, Ind.; S. L. Ledbetter, Birmingham, Ala.; Mark J. Schoenberg, New York; Walter Baer Weidler, New York; Melville Black, Denver; J. S. Weyler, Cincinnati; John A. Donovan, Butte, Mont.; Hiram Woods, Baltimore; William Zentmayer, Philadelphia; W. H. Wilder, Chicago; Oscar Wilkinson, Washington, D. C.; A. E. Davis, New York, and Will Walter, Chicago.

Dr. Lucien Howe, Buffalo, read a paper on "The Temperature of the Conjunctiva." Discussed by Drs. Edward Jackson, Denver; Melville Black, Denver; Allen Greenwood, Boston; Mark J. Schoenberg, New York; W. H. Wilder, Chicago; George H. Price, Nashville, and Lucien Howe, Buffalo.

Dr. Clifford B. Walker, Boston, read a paper on "The Topical Diagnostic Value of the Hemiopic Pupillary Reaction and the Wilbrand Hemianoptic Prism Phenomenon, with a New Method of Performing the Latter." Discussed by Drs. C. D. Wescott, Chicago; Walter B. Lancaster, Boston, and Clifford B. Walker, Boston.

Wednesday, June 18—Evening

Mr. Henry Copley Greene, Boston, read a paper on "Preventable Blindness: Challenge to the Professions." Discussed by Drs. W. H. Wilder, Chicago; Casey A. Wood, Chicago; Thomas A. Woodruff, Chicago; Lucien Howe, Buffalo, N. Y., and Mr. Henry Copley Greene, Boston.

Thursday, June 19—Morning

Dr. H. B. Lemere, Omaha, read a paper on "Apparent Esophoria and Its Relation to Convergence Insufficiency." Discussed by Drs. G. C. Savage, Nashville, Tenn.; S. D. Risley, Philadelphia; Edward Jackson, Denver; Casey Wood, Chicago; Oscar Wilkinson, Washington, D. C.; C. D. Westlake, Chicago; George H. Price, Nashville, Tenn., and H. B. Lemere, Omaha.

The Chairman announced that the Section would take up the regular order of business and have the report of the Executive Committee, Dr. A. E. Bulson, Jr., Chairman. The following officers were elected: Chairman, Dr. Frank C. Todd, Minneapolis; Vice-Chairman, Dr. William Zentmayer, Philadelphia; Secretary (for a term of three years), Dr. George S. Derby, Boston; Delegate, Dr. Melville Black, Denver.

The Executive Committee recommended that a committee of six members of the Section be appointed to study and report at the next meeting on the Teaching of Ophthalmology in our Medical Schools, and that the retiring Chairman of the Section be a member of this committee.

The Executive Committee also recommended that a committee of five members be appointed by the Chairman of the Section to consider and report on optometry legislation, and that of this committee Dr. Hiram Woods be a member.

The report of the committee was adopted.

The Chairman announced that he would report in reference to the committees later.

Report on the Knapp Testimonial Fund having been called for, Dr. A. E. Bulson, Jr., Chairman, reported that 255 members had contributed, the majority having contributed $5 each and the remainder less than $5; there was on hand in cash practically $900. He made a plea for a more hearty response to the request for subscriptions to this fund. He explained that subscriptions of $5 or more entitled the member to the bound Transactions and the Ophthalmic Year Book, and that in addition they were contributing to the perpetuation of the Knapp Medal, which is offered to members of the Section for the best scientific work on various lines or a contribution to the literature. In response to a question by Dr. Casey A. Wood as to whether or not a list was kept of contributing members and bills sent to them from year to year, the Chairman said that the announcements would be sent from his office; that subscriptions must be in promptly after the meeting if members were to receive the bound transactions, as the Association office must know at an early date after the meeting how many bound volumes were to be provided for.

Dr. Edward Jackson made a statement in regard to the delay in getting out the Year Book this year, as there were two years of work involved, and the number of publishers who could handle the work to advantage were very few, the office of the American Medical Association perhaps having the best facilities. He explained that the book would be mailed soon.

Dr. F. Park Lewis moved the adoption of Dr. Bulson's report, which was seconded. Dr. Lewis inquired whether there was any method by which individual foreign journals could be obtained by the members. Dr. Jackson answered that they might be borrowed from the Surgeon-General's Office, or from American subscription agents in New York. Dr. L. H. Taylor explained that they might be had from the New York Book Co.

The motion for the adoption of the report carried.

Dr. A. E. Bulson announced that it would be necessary to elect a Committee on Award of the Knapp Medal, and in order to save time suggested the following names for that committee for the year 1913: Drs. Edward Jackson, Denver; Casey A. Wood, Chicago; John E. Weeks, New York.

The Chairman explained that according to the rule established by the Section, this Committee of Award is elected by the Section.

Dr. G. C. Savage moved that the men named by Dr. Bulson be made the Committee. Seconded.

Dr. George H. Price moved that the nominations be closed and that the members named constitute the committee. Seconded.

The Chairman declared that the members named were duly elected as members of the Committee on Award of the Knapp Medal.

Dr. Lucien Howe, Chairman, reported progress for the Committee on Study of the Ocular Muscles, and moved that the report which appeared in the presession volume two years ago (1911) appear in the regular Transactions of this year.

The motion was seconded.

After considerable discussion, Dr. S. D. Risley moved as an amendment to the original motion that the report be referred back to the publication committee with power to act. This was seconded.

It was explained that the Section had no publication committee other than the Executive Committee, and, with the consent of Dr. Risley, Executive Committee was substituted for Publication Committee in his motion. Dr. Sagage, who had objected to the original motion, stated that he was willing that the substitute motion should be adopted.

Dr. Bulson objected because the report was not on the merits of the question submitted to the committee, and moved that the whole matter be made a matter of discussion and action by the Section next year. Dr. Risley called attention to the fact that the Executive Committee could make such a recommendation under his motion.

The Chair stated that the question was on Dr. Risley's amendment to Dr. Howe's motion, that the matter be referred to the Executive Committee with power to act. It carried. It was declared that this disposed of the original motion.

Dr. Casey A. Wood of the Committee on Conservation of Vision reported that the elaborate report prepared by that committee had been taken up by the Council on Health and Public Instruction and would be printed and circulated by them; that the committee had been requested to meet with the Council in Minneapolis, which had been done. The Council suggested that the Section on Ophthalmology suggest a representative committee o fthe Section, and that the Council would nominate them as part of its Committee on Conservation of Vision. The following names were suggested to the Council: Drs. Frank Allport, Chicago, Chairman; Hiram Woods, Baltimore; F. Park Lewis, Buffalo, N. Y.; Vard H. Hulen, San Francisco; Harold Gifford, Omaha; W. E. Bruner, Cleveland, Ohio; E. C. Ellet, Memphis, Tenn.; Walter B. Lancaster, Boston; W. H. Wilder, Chicago; H. D. Bruns, New Orleans; J. J. Carroll, Baltimore; E. M. Alger, New York; W. C. Posey, Philadelphia, and Casey A. Wood, Chicago.

The committee asked to be discharged.

Dr. A. E. Bulson moved the adoption of the report and the discharge of the committee. Carried.

The Chairman announced that the Committee on Education in Ophthalmology would consist of Drs. Edward Jackson, Denver, Chairman; William H. Wilder, Chicago; Walter R. Parker, Detroit; William Zentmayer, Philadelphia; Alexander Duane, New York, and by suggestion of the Executive Committee, Hiram Woods, Baltimore.

It was announced that the Chairman of the Committee on Optometry would be William C. Posey, but the other members of the committee would not be announced at this time if the Section would consent to this arrangement.

Dr. Edward Jackson, Denver, moved that the Chairman be given time to appoint that committee. Adopted by consent.

Dr. Allen Greenwood, Boston, read a paper on "Ocular Vertigo." Discussed by Drs. Albert E. Bulson, Jr., Ft. Wayne, Ind.; G. C. Savage, Nashville, Tenn.; E. L. Jones, Cumberland, Md.; L. H. Taylor, Wilkes-Barre, Pa.; C. D. Wescott, Chicago; F. Park Lewis, Buffalo, N. Y.; Walter B. Lancaster, Boston; George S. Derby, Boston; Edward Jackson, Denver; Hiram Woods, Baltimore, and Allen Greenwood, Boston.

Dr. Samuel D. Risley, Philadelphia, read a paper on "Is the Percentage of Myopic Eyes Diminishing?" Discussed by Drs. F. Park Lewis, Buffalo, N. Y.; Albert E. Bulson, Jr., Ft. Wayne, Ind., and S. D. Risley, Philadelphia.

Dr. John B. Potts, Omaha, read a paper on "Some Comparative Measurements of the Skull and Sella Turcica, with the Report of Eight Cases." Discussed by Drs. William H. Mick, Omaha, and John B. Potts, Omaha.

Thursday, June 19—Afternoon

Dr. Walter Baer Weidler, New York, read a paper on "Blepharochalasis. Report of Two Cases with the Microscopic Examination." Discussed by Drs. Edgar S. Thomson, New York; Arthur J. Bedell, Albany, N. Y., and Walter Baer Weidler, New York.

Dr. Nelson M. Black, Milwaukee, Wis., read a paper on "Artificial Illumination a Factor in Ocular Discomfort." Discussed by Herbert E. Ives, Philadelphia. Dr. Black exhibited a number of lantern-slides of the spectra of different kinds of artificial lights and explained them.

Dr. Walter R. Parker, Detroit, read a paper on "Postcataract Extraction Delirium. Report of Eleven Cases." Discussed by Drs. Edward Jackson, Denver; Allen Greenwood, Boston; C. D. Wescott, Chicago; Melville Black, Denver; William Zentmayer, Philadelphia; S. D. Risley, Philadelphia, and Walter R. Parker, Detroit.

Dr. Lee Masten Francis, Buffalo, N. Y., read a paper on "Surgical Treatment of a Certain Type of Penetrating Wounds of the Sclera by a Double Conjunctival Flap." Discussed by Drs. John A. Donovan, Butte, Mont.; W. H. Wilder, Chicago; Allen Greenwood, Boston, and Lee Masten Francis, Buffalo.

Dr. Charles Nelson Spratt, Minneapolis, read a paper on "Primary Lues of the Bulbar Conjunctiva." Discussed by Drs. Arthur J. Bedell, Albany, N. Y., and Charles Nelson Spratt, Minneapolis.

Remarks were made by Dr. Savage and Dr. Hiram Woods, and the thanks of the Section were given to the university and the people and the profession of Minneapolis who contributed to the success of the meeting. Dr. Frank C. Todd, the Chairman-Elect, made some remarks and the Section adjourned.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

Tuesday, June 17—Afternoon

The Chairman, Dr. Guy L. Kiefer, called the meeting to order at 2:20 p. m.

The Secretary, Dr. C. Hampson Jones, omitting certain portions, read the minutes of the last meeting, held June 4 to June 6, inclusive, 1912, at Atlantic City, which, without alteration, were adopted.

Dr. Kiefer then read his Chairman's address and oration. No discussion.

Dr. J. W. Trask, Washington, D. C., read a paper on "Morbidity Reports: Their Purpose and Present Status." Discussed by Mr. Louis Dublin, statistician of the Metropolitan Life Insurance Co., New York; and by Drs. Pauline M. Townsend-Hanson, Marshalltown, Iowa; P. M. Hall, Minneapolis; C. Hampson Jones, Baltimore; James A. Hayne, Columbia, S. C., and Liston H. Montgomery, Chicago.

Dr. Harold B. Wood, Rochester, Minn., read a paper on "The Need for Whole-Time Health Officers." Discussed by Drs. W. C. Rucker, Washington, D. C.; W. A. Howe, Albany, N. Y.; Otto P. Geier, Cincinnati; J. N. Hurty, Indianapolis; Pauline M. Townsend-Hanson, Marshalltown, Iowa; E. F. Otis, Penuelas, Porto Rico; M. W. Richardson, Boston, and Harold B. Wood, Rochester, Minn.

There being no report from the committee appointed at the last meeting to cooperate with the officials of the Bureau of Census and with any committee that might be appointed by the Association of Municipal Health Officers to arrange a scheme of standard or uniform accounts and reports of municipal departments of health, the committee, consisting of Drs. W. F. Snow, San Francisco; W. A. Evans, Chicago; H. M. Bracken, Minneapolis; G. T. Schwartz, Providence, R. I., and C. H. Jones, Baltimore, was continued, with the substitution, at the request of Dr. W. A. Evans, Chicago, of Dr. L. G. Powers' name for his own.

The Chairman then, through the Secretary, announced his appointments for the following: 1. Committee on Nominations: Drs. W. A. Evans, M. P. Ravenel and Otto P. Geier. 2. Commmittee on Resolutions: Drs. J. W. Trask, J. N. Hurty and P. M. Hall.

WEDNESDAY, JUNE 18—MORNING

Dr. W. A. Evans, Chicago, moved that a committee be appointed to draft suitable resolutions relating to the forthcoming retirement from public health work of Dr. Guy L. Kiefer, such resolutions to be transmitted to the city council of Detroit. The motion prevailed, and Dr. Evans appointed Drs. Hall, Albert and Heinz as such committee.

Dr. E. F. Otis, Penuelas, Porto Rico, read a paper on "Experiences of a Health Officer in Porto Rico." Discussed by Drs. J. W. Trask, Washington, D. C., and E. F. Otis, Penuelas, Porto Rico.

Dr. Henry Albert, Iowa City, Iowa, read a paper on "The Treatment of Diphtheritic Carriers." Discussed by Drs. L. L. Ten Broeck, Minneapolis; Harold B. Wood, Rochester, Minn.; D. L. Richardson, Providence, R. I.; C. H. Jones, Baltimore; M. P. Ravenel, Madison, Wis.; E. F. Otis, Penuelas, Porto Rico, and Henry Albert, Iowa City, Iowa.

Dr. W. C. Rucker, Washington, D. C., read a paper on "The Legal Aspect of the Federal Protection of the Public Health." Discussed by Drs. Pauline M. Townsend-Hanson, Marshalltown, Iowa; James A. Hayne, Columbia, S. C., and W. C. Rucker, Washington, D. C.

Dr. M. P. Ravenel, Madison, Wis., read a paper on "The Effects of Antityphoid Vaccination on the Normal Leukocyte Count," by Dr. Karl W. Smith, Madison, Wis. Discussed by Drs. Henry Albert, Iowa City, Iowa, and M. P. Ravenel, Madison, Wis.

Dr. Oscar Dowling, Shreveport, La., moved that the House of Delegates be requested to elect to associate fellowship in the American Medical Association the author of "The Great American Fraud," Mr. Samuel Hopkins Adams. The motion was seconded and carried. [The House concurred.]

WEDNESDAY, JUNE 18—AFTERNOON

The Secretary, Dr. C. Hampson Jones, read a letter from the Secretary of the American Medical Association, dated Minneapolis, June 18, 1913, stating that C. Wardell Stiles, Washington, D. C., had been suggested for associate membership in the American Medical Association and asking the endorsement of said application by the officers of the Section; which endorsement the Secretary, Dr. Jones, stated that the Chairman, Dr. Kiefer, and he had given.

Dr. A. W. Lescohier, Detroit, read a paper on "Duration of Immunity Following Vaccination." Discussed by Drs. C. N. Hensel, St. Paul; V. C. Vaughan, Jr., Detroit; C. A. Harper, Madison, Wis.; P. M. Hall, Minneapolis; C. Hampson Jones, Baltimore; A. W. Lescohier, Detroit; Harold B. Wood, Rochester, Minn., and Guy L. Kiefer, Detroit.

Dr. M. Clayton Thrush, Philadelphia, read a paper on "The Value of Sanitation as Applied to Railways and Other Large Corporations." Discussed by Drs. W. C. Rucker, Washington, D. C.; A. M. Hume, Owosso, Mich.; Albert E. Campbell, Chicago; C. C. Pratt, Mankato, Minn.; R. Q. Lillard, Ashville, Tenn.; Margaret M. Ryan, Brookston, Minn., and M. Clayton Thrush, Philadelphia.

Dr. John S. Fulton, Baltimore, read a paper on "Isolation of the Typhoid Bacillus from Milk Which Caused a Typhoid Outbreak," by Drs. William Royal Stokes and Harry W. Stones, Baltimore. No discussion.

THURSDAY, JUNE 19—MORNING

The Committee on Nominations reported the following nominations: Chairman, Dr. M. P. Ravenel, Madison, Wis.; Vice-Chairman, Dr. W. C. Rucker, Washington, D. C.; Secretary, Dr. C. Hampson Jones, Baltimore; Delegate, Dr. M. Smith, Little Rock, Ark., and Alternate, Dr. P. M. Hall, Minneapolis. On motion of Dr. A. M. Harvey, Chicago, seconded by Dr. Guilford H. Sumner, Des Moines, Iowa, and duly carried, the Secretary cast the ballot of the Section for these nominees, who thus became the incumbents of the respective offices for the ensuing year.

Dr. R. Q. Lillard, Lebanon, Tenn., presented a resolution that a committee of three be appointed by the Chairman of this Section, two members of the Section and one from the Public Health Service, to investigate cerebrospinal meningitis and report their findings at the next annual meeting. The motion, seconded by Dr. P. M. Hall, Minneapolis, and discussed by Dr. W. A. Evans, Chicago, prevailed.

The Committee on Resolutions relating to the retirement from active public health work of Dr. Guy L. Kiefer, presented the following:

> *To the Board of Health of the City of Detroit:* The Section on Preventive Medicine and Public Health of the American Medical Association, in convention assembled at Minneapolis, has learned of the voluntary retirement of Dr. Guy L. Kiefer, as your health officer. We desire to express to you, to the citizens of your city, to the citizens of the State of Michigan, and to the public health workers everywhere, the keen regret we feel in the retirement of Dr. Kiefer from active public-health work. As health officer he has been eminently progressive and successful. As a public-health worker his advice and counsel has been sound and conservative. We trust that in some way advisory or educational his services may not be entirely lost to you and to the cause of public health.
>
> P. M. HALL,
> E. A. HINES,
> HENRY ALBERT,
> Committee.

This expression of appreciation was duly adopted and elicited the thanks of Dr. Kiefer.

Dr. Pauline M. Townsend-Hanson, Marshalltown, Iowa, presented a motion that a committee of three be appointed by the Chairman to investigate and report at the next meeting of the Section on poverty in its relation to disease and the best methods of diminishing poverty.

The motion, seconded by Dr. W. A. Evans, Chicago, was discussed by Drs. S. A. Knopf, New York; Pauline M. Townsend-Hanson, Marshalltown, Iowa, and W. A. Evans, Chicago; was amended by suggestion of Dr. Guy L. Kiefer, Detroit, to read "five" instead of "three," and thus finally prevailed.

Dr. Mary E. Lapham, Highland, N. C., read a paper on "Field Work in Tuberculosis." Discussed by Drs. Rosina Wistein, Chicago; Guilford H. Sumner, Des Moines, Iowa; Severance Burrage, Indianapolis; C. C. Browning, Los Angeles; W. A. Evans, Chicago; Gertrude Felker, Dayton, Ohio, and Mary E. Lapham, Highland, N. C.

Dr. V. C. Vaughan, Jr., Detroit, read a paper on "Early Diagnosis of Pulmonary Tuberculosis." Discussed by Drs. S. A. Knopf, New York; E. S. Everhard, Dayton, Ohio; C. C. Browning, Los Angeles; F. L. Class, Huron, S. Dak.; M. P. Ravenel, Madison, Wis.; M. Collins, Denver; H. E. Dearholt, Milwaukee, Wis., and V. C. Vaughan, Jr., Detroit.

Dr. Mary Lawson Neff, Fairfield, Iowa, read a paper on "The Minimizing of Insanity." Discussed by Drs. Pauline M. Townsend-Hanson, Marshalltown, Iowa; E. S. Everhard, Dayton, Ohio; J. N. Hurty, Indianapolis; M. D. Oberholzer, Harrisonville, Mo.; S. A. Knopf, New York; A. W. Erskine, Cedar Rapids, Iowa; Bertha Van Hoosen, Chicago, and Mary Lawson Neff, Fairfield, Iowa.

THURSDAY, JUNE 19—AFTERNOON

The Chairman, through the Secretary, then announced his appointments for the following: 1. Committee to cooperate with U. S. Public Health Service in a study of cerebrospinal meningitis: Drs. R. Q. Lillard, Nashville, Tenn.; James A. Hayne, Columbia, S. C.; R. H. Van Ezdorf, Mobile. 2. Committee to investigate poverty, etc.: Drs. Pauline M. Townsend-Hanson, Marshalltown, Iowa; W. A. Evans, Chicago; J. N. Hurty, Indianapolis; S. A. Knopf, New York; Mary Lawson Neff, Fairfield, Iowa.

Dr. P. M. Hall, Minneapolis, read a paper on "Some New Minnesota Laws on Tuberculosis." Discussed by Drs. S. A. Knopf, New York; V. C. Vaughan, Jr., Detroit; W. J. Markley, Minneapolis; J. N. Hurty, Indianapolis; Otto P. Geier, Cincinnati; C. Hampson Jones, Baltimore; L. S. D. Robinson, St. Paul; W. A. Evans, Chicago; Liston H. Montgomery, Chicago; Guy L. Kiefer, Detroit; J. W. Trask, Washington, D. C., and P. M. Hall, Minneapolis.

Dr. J. R. Williams, Rochester, N. Y., read a paper on "Ice as a Factor in Public Health." Discussed by Drs. L. S. D. Robinson, St. Paul, and J. R. Williams, Rochester, N. Y.

The Secretary, Dr. C. Hampson Jones, then read a paper on "The Use of Blood Agar in Routine Examination of Milk Sediments," by Dr. F. W. Hachtel, Baltimore. No discussion.

Dr. J. N. Hurty, Indianapolis, presented a motion that the Chairman appoint a committee to investigate and report to this

Section the method by which the physician in general practice can best assist the hospitals for the insane in securing adequate case histories and in reducing insanity.

Dr. W. A. Evans, Chicago, seconded the resolution which, amended on suggestion of Dr. S. A. Knopf, New York, by striking out the words "in general practice," thus prevailed.

Dr. W. A. Evans, Chicago, moved a vote of thanks to the Chairman and Secretary, which prevailed. The Section then, on motion, adjourned *sine die*; whereupon the retiring Chairman, Dr. Guy L. Kiefer, recorded the appointment of Drs. J. N. Hurty, Indianapolis; Mary L. Neff, Fairfield, Iowa, and Henry Albert, Iowa City, Iowa, as the committee on insanity, etc., in compliance with resolution previously carried.

SECTION ON GENITO-URINARY DISEASES

TUESDAY, JUNE 17—AFTERNOON

The meeting was called to order at 2:15 p. m., the Chairman, Dr. Hugh H. Young, Baltimore, presiding.

The Chairman said that owing to the fact that neither the Delegate of the Section to the House of Delegates, nor the Alternate, was present, it would be necessary to select a Delegate and Alternate. Thereupon Dr. Bransford Lewis, St. Louis, and Dr. Thomas M. Paul, St. Joseph, Mo., were elected Delegate and Alternate, respectively.

The Chairman called attention to the fact that last year one hundred copies of the Transactions had been sent abroad to journals, libraries and prominent men, and suggested that it would be desirable to do the same thing this year.

Dr. W. M. Spitzer, Denver, read a paper entitled, "A Study of the Normal Kidney, Its Pelvis and Ureter, with Stereopticon Views." Discussed by Drs. O. S. Fowler, Denver; W. F. Braasch, Rochester, Minn., and W. M. Spitzer, Denver.

Dr. Bransford Lewis, St. Louis, gave "Stereopticon Views of Pathologic Conditions of the Ureter and Kidney, with Methods of Examination and Their Bearing on Diagnosis." No discussion.

Dr. W. F. Braasch, Rochester, Minn., read a paper on "Essential Hematuria." Discussed by Drs. J. R. Caulk, St. Louis; O. S. Fowler, Denver; A. L. Chute, Boston, and W. F. Braasch, Rochester, Minn.

Dr. O. S. Fowler, Denver, read a paper on "Experimental Kidney Surgery." Discussed by Drs. Walter E. Scott, Adel, Iowa; A. L. Chute, Boston; W. M. Spitzer, Denver; Granville MacGowan, Los Angeles; Hugh H. Young, Baltimore; W. F. Braasch, Rochester, Minn.; George G. Smith, Boston, and O. S. Fowler, Denver.

Dr. Henry Dawson Furniss, New York, read a paper on "The Use of Indigocarmin Intravenously."

Dr. John T. Geraghty, Baltimore, read a paper on "The Value of Various Functional Tests in the Differential Diagnosis of Renal Diseases."

These two papers were discussed by Drs. Louis E. Schmidt, Chicago; W. F. Braasch, Rochester, Minn.; J. R. Caulk, St. Louis; A. J. Folsom, Dallas, Tex.; Henry Dawson Furniss, New York; Granville MacGowan, Los Angeles; Hugh H. Young, Baltimore; Henry Dawson Furniss, New York, and John T. Geraghty, Baltimore.

WEDNESDAY, JUNE 18—MORNING

Dr. J. R. Caulk, St. Louis, read a paper entitled, "Ureterovesical Cysts: An Endovesical Operative Procedure for Their Relief."

Dr. D. N. Eisendrath, Chicago, read a paper on "The Formation of a New Ureter: Experimental Study."

Dr. Carl Beck, Chicago, read a paper on "Implantation of the Ureter Into the Bowel, with Report of Two Cases."

Dr. M. Krotoszyner, San Francisco, read a paper on "Untoward Results of Nephrolithotomy."

These four papers were discussed by Drs. George G. Smith, Boston; V. D. Lespinasse, Chicago; D. N. Eisendrath, Chicago; O. S. Fowler, Denver; Hugh Cabot, Boston; Louis E. Schmidt, Chicago; William T. Belfield, Chicago; J. R. Caulk, St. Louis; Hugh H. Young, Baltimore, and M. Krotoszyner, San Francisco.

Dr. Hugh H. Young, Baltimore, then delivered the Chairman's Address, taking for his subject "The Present Status of the Diagnosis and Treatment of Tumors of the Bladder." Discussed by Drs. Hugh Cabot, Boston; Granville MacGowan, Los Angeles; A. C. Stokes, Omaha; Louis E. Schmidt, Chicago; J. R. Caulk, St. Louis, and D. N. Eisendrath, Chicago.

WEDNESDAY, JUNE 18—AFTERNOON

Dr. George G. Smith, Boston, read a paper on "Chronic Cystitis in Women Not a Disease." Discussed by Drs. Bransford Lewis, St. Louis; O. S. Fowler, Denver; W. T. Elam, St. Joseph, Mo.; M. Krotoszyner, San Francisco; J. R. Caulk, St. Louis; Thomas M. Paul, St. Joseph, Mo.; A. I. Folsom, Dallas, Tex.; A. L. Chute, Boston, and George G. Smith, Boston.

Dr. Granville MacGowan, Los Angeles, read a paper on "The Transverse Incision of the Skin and Abdominal Fascia as a Method of Approach in Suprapubic Operations on the Bladder and Prostate." Discussed by Drs. W. T. Elam, St. Joseph, Mo.; M. Krotoszyner, San Francisco; G. G. Smith, Boston; A. L. Chute, Boston, and Granville MacGowan, Los Angeles.

Dr. E. O. Smith, Cincinnati, read a paper on the "Pathology of the Prostate, with Lantern-Slide Demonstration." Discussed by Drs. John T. Geraghty, Baltimore; Bransford Lewis, St. Louis; Hugh H. Young, Baltimore, and E. O. Smith, Cincinnati.

Dr. William T. Belfield, Chicago, read a paper entitled, "Radiographic Observations of Pus-Tubes in the Male."

Dr. V. D. Lespinasse, Chicago, read a paper on "Transplantation of the Testicle."

These two papers were discussed by Drs. E. O. Smith, Cincinnati; V. D. Lespinasse, Chicago; William T. Belfield, Chicago, and V. D. Lespinasse, Chicago.

The Chairman announced the appointment of Drs. J. R. Caulk, St. Louis; F. M. McCallum, Kansas City, Mo., and G. G. Smith, Boston, as members of the nominating committee.

THURSDAY, JUNE 19—MORNING

The following officers were elected for the ensuing year: Chairman, Dr. Arthur L. Chute, Boston; Vice-Chairman, Dr. Granville MacGowan, Los Angeles; Secretary, Dr. Louis E. Schmidt, Chicago; Delegate, Dr. V. D. Lespinasse, Chicago, and Alternate, Dr. E. O. Smith, Cincinnati.

The following papers were read as a Symposium on Diseases of the Testicle:

Dr. Arthur D. Bevan, Chicago: "Operative Treatment of Undescended Testis."

Dr. A. C. Stokes, Omaha: "The Probable Embryonic Origin of Tumors of the Testicle, with Report of Two Cases and Lantern-Slide Demonstration."

Dr. O. Lyons, Denver: "Primary Tuberculosis of the Genital Organs in Children."

Dr. Hugh Cabot, Boston: "The Indications for and Technic of the Operative Treatment of Genital Tuberculosis."

The four papers of this symposium were discussed by Drs. Louis E. Schmidt, Chicago; Bransford Lewis, St. Louis; Hugh Cabot, Boston; A. D. Bevan, Chicago; V. D. Lespinasse, Chicago; Granville MacGowan, Los Angeles; Hugh H. Young, Baltimore; S. A. Mahoney, Holyoke, Mass.; A. C. Stokes, Omaha, and Hugh Cabot, Boston.

The paper of Dr. W. W. Townsend, Rutland, Vt., entitled, "The Pseudodiphtheria Organism in the Urinary Tract," was read by Dr. G. G. Smith, Boston.

Dr. Frank Hinman, Baltimore, read a paper entitled, "An Experimental Study of the Value of the Internal Use of Hexamethylenamin, with the Report of a Simple Clinical Method of Quantitative Estimation of Formaldehyd."

Dr. M. L. Heidingsfeld, Cincinnati, read a paper on "Clinical and Laboratory Salvarsan Relapses, and Their Remedy."

Dr. Victor Vecki, San Francisco, read a paper on the "Progress in the Treatment of Syphilis."

These four papers were discussed by Drs. G. G. Smith, Boston; M. Krotoszyner, San Francisco; H. A. Cohen, Minneapolis; A. L. Wolbarst, New York; E. G. Ballenger, Atlanta, Ga.; John T. Geraghty, Baltimore; Louis E. Schmidt, Chicago; M. L. Heidingsfeld, Cincinnati, and Victor Vecki, San Francisco.

Adjournment.

SECTION ON HOSPITALS

Tuesday, June 17—Afternoon

The meeting was called to order at 2 p. m. by Dr. H. B. Howard, Chairman.

Dr. F. A. Washburn, delegate to House of Delegates was not present, and on motion, seconded and carried, Dr. Joseph B. Howland, Boston, was elected alternate delegate.

Dr. H. B. Howard, Boston, Chairman, read the "Chairman's Address."

Mr. Edward F. Stevens, Boston, read a paper on "The Trend of European Hospital Architecture." No discussion, the Chairman stating that the discussion of all papers would be held at the end of the day's session.

Mr. Richard E. Schmidt, Chicago, read a paper on "Architecture of the Great Charity Hospital."

Mr. L. A. Lamoreaux, Minneapolis, gave an address on "Architecture of the Modern Hospital for Contagious Diseases."

Dr. John Allan Hornsby, Chicago, read a paper on "Equipment of a Small Hospital. Making Over a Dwelling House."

Dr. Herbert C. Cole, Bogalusa, La., read a paper on "Possibilities in the Routine Practice of a Small Hospital."

These five papers were then discussed by Drs. Cleveland H. Shutt, St. Louis; Joseph B. Howland, Boston; E. E. Munger, Spencer, Iowa; John N. E. Brown, Detroit; Richard E. Schmidt, Chicago, and Arthur B. Ancker, St. Paul, Minn.

Wednesday, June 18—Morning

Dr. Leonhard Felix Fuld, New York, not being present, the Secretary, Dr. John A. Hornsby, Chicago, read his paper on "Selection of Hospital Help under Civil Service Rules." Discussed by Drs. Moses Collins, Denver; Joseph B. Howland, Boston; John N. E. Brown, Detroit; John A. Hornsby, Chicago; Herbert O. Collins, Minneapolis, and Miss Harriet S. Hartry, Minneapolis.

Dr. Rupert Norton, Baltimore, then read a paper on "Municipal Hospitals and Their Relation to the Community." No discussion.

Dr. Herbert J. Hall, Marblehead, Mass., then read a paper on "Hospital and Asylum Work-Shops: Some Possibilities of Handicapped Labor." No discussion.

Dr. E. E. Southard, Cambridge, Mass., then read a paper on "The Psychopathic Hospital Idea." Discussed by Drs. John A. Hornsby, Chicago; Arthur B. Ancker, St. Paul, Minn.; Rupert Norton, Baltimore; Cleveland H. Shutt, St. Louis, and H. B. Howard, Boston.

Dr. Thomas Howell's paper on "Factors Influencing Hospital Costs," was read by the Secretary.

The Secretary then read the report of Dr. Henry M. Hurd, Baltimore, Chairman of Committee on Standardization and Classification of Hospitals. On motion of Dr. Cleveland H. Shutt, St. Louis, duly seconded and carried, the committee was continued as suggested in report.

The papers of the morning were then discussed by Drs. Arthur B. Ancker, St. Paul, Minn.; Cleveland H. Shutt, St. Louis; W. T. Graham, Des Moines, Iowa; John A. Hornsby, Chicago; John N. E. Brown, Detroit, and Mr. W. B. Stratton, Detroit.

Dr. John N. E. Brown, Detroit, moved that a committee on "Outpatients and Dispensary Abuse," be appointed to investigate and report at next meeting, committee to be composed of Drs. Joseph D. Farrer, Philadelphia; Wayne Smith, St. Louis; Joseph B. Howland, Boston; A. R. Warner, Cleveland, and John A. Peters, Providence, R. I. Motion seconded and carried.

Discussion of papers was continued by Drs. John A. Hornsby, Chicago; H. B. Howard, Boston; S. G. Cobb, St. Paul, Minn.; Messrs. W. B. Stratton, Detroit; Edwards F. Stevens, Boston, and Richard E. Schmidt, Chicago.

Thursday, June 19—Morning

The following officers were elected: Chairman, Dr. L. B. Baldwin, Minneapolis; Secretary, Dr. John A. Hornsby, Chicago; Delegate, Dr. Fred A. Washburn, Boston; Alternate, Dr. Joseph B. Howland, Boston.

The Secretary read a paper on "Efficiency in Hospital Nursing" by Dr. W. Gilman Thompson, New York, who was not present. No discussion.

Dr. Richard O. Beard, Minneapolis, read a paper on "The Trained Nurse of the Future.' No discussion.

Dr. Joseph B. Howland, Boston, read a paper on "The Nursing Situation as It Is To-day."

The papers were then discussed by Drs. P. E. Truesdale, Fall River, Mass.; Arthur B. Ancker, St. Paul, Minn.; Kate Lindsay, Boulder, Colo.; Cleveland H. Shutt, St. Louis; H. B. Howard, Boston; John A. Hornsby, Chicago; Richard O. Beard, Minneapolis; Misses Louise M. Powell, Minneapolis; Harriett S. Hartry, Minneapolis; Laura Patterson, Minneapolis, and Delia O'Connell, Minneapolis.

Dr. Cleveland H. Shutt, St. Louis, moved that Dr. Louis B. Baldwin, Minneapolis, be elected Chairman; motion was seconded by Dr. Joseph B. Howland, Boston, and carried.

The Secretary then read a letter from Dr. Alexander R. Craig, Secretary.

Dr. Joseph B. Howland, Boston, then moved that Dr. John A. Hornsby, Chicago, be elected Secretary. Dr. John N. E. Brown, Detroit, seconded the motion. Carried.

Dr. Joseph B. Howland, Boston, moved that Dr. F. A. Washburn be elected delegate to House of Delegates and Dr. John N. E. Brown, Detroit, moved that Dr. Joseph B. Howland, Boston, be elected as alternate. Motions seconded and carried.

The Chairman then declared the session closed.

SECTION ON ORTHOPEDIC SURGERY

Tuesday, June 17—Afternoon

The meeting was called to order by the Chairman, Dr. Newton M. Shaffer, New York, at 2:05 p. m.

Dr. Shaffer expressed his regret at being unable to present the paper given for him on the program, owing to circumstances beyond his control, but stated that he had prepared as his Address another paper, entitled "The Orthopedic Surgery of Fifty Years Ago, and Some Reminiscences and Conclusions." He then read this paper. No discussion.

Dr. Wallace Blanchard, Chicago, read a paper on "The New Immigration as It Affects Orthopedic Surgery." Discussed by Drs. Reginald H. Sayre, New York, and Wallace Blanchard, Chicago.

Dr. J. W. Cokenower, Des Moines, Iowa, read a paper on "Infected Joints from Diseased Tonsils and Teeth or Other Diseased Parts of the Body." Discussed by Drs. Henry Ling Taylor, New York; Wisner R. Townsend, New York; F. J. Gaenslen, Milwaukee; Emil S. Geist, Minneapolis; Albert H. Freiberg, Cincinnati; Roland O. Meisenbach, Buffalo; J. D. Griffith, Kansas City, Mo.; Clarence B. Francisco, Kansas City, Mo.; Gilbert L. Bailey, Oak Park, Ill., and J. W. Cokenower, Des Moines, Iowa.

Dr. Henry Ling Taylor, New York, read a paper on "Charcot Joints as an Initial or Early Symptom of Tabes Dorsalis." Discussed by Drs. J. D. Griffith, Kansas City, Mo.; F. J. Cotton, Boston; Gilbert L. Bailey, Oak Park, Ill.; John Ridlon, Cheiago, and Henry Ling Taylor, New York.

Wisner R. Townsend, New York, read a paper on "Causes of Error in the Diagnosis of Diseases of the Joints." Discussed by Drs. J. D. Griffith, Kansas City, Mo.; Henry Ling Taylor, New York; E. W. Caldwell, New York; Reginald H. Sayre, New York, and Wisner R. Townsend, New York.

Dr. Emil S. Geist, Minneapolis, announced that Dr. E. G. Abbott of Portland, Maine, would give a demonstration of his principles in applying scoliotic jackets on Wednesday, immediately after the morning session; also that clinics would be given by Dr. Fred H. Albee of New York and Dr. John Ridlon of Chicago, at different hospitals.

Adjourned at 4:20 p. m.

Wednesday, June 18—Morning

Dr. Leonard W. Ely, Denver, read a paper on "The Employment of Injections in the Treatment of Joint Tuberculosis."

Discussed by Dr. Fred H. Albee, New York; John Prentiss Lord, Omaha; J. D. Griffith, Kansas City, Mo., and Leonard W. Ely, Denver.

Dr. H. Winnett Orr, Lincoln, read a paper on "Results Obtained in the Non-Surgical Treatment of Tuberculosis of the Joints." Discussed by Drs. L. W. Ely, Denver; E. W. Ryerson, Chicago; J. L. Porter, Chicago; Emil S. Geist, Minneapolis; John Ridlon, Chicago; J. P. Lord, Omaha; Arthur Steindler, Des Moines; J. D. Griffith, Kansas City, Mo.; Fred H. Albee, New York; E. A. Rich, Tacoma, Wash.; Willis C. Campbell, Memphis, Tenn.; H. L. Taylor, New York; R. H. Sayre, New York; N. M. Shaffer, New York, and H. W. Orr, Lincoln, Neb.

Wednesday, June 18—Afternoon

Dr. F. J. Cotton, Boston, read a paper on "Hip-Fractures; Their Adequate Treatment." Discussed by Drs. John Ridlon, Chicago; J. P. Lord, Omaha; E. W. Ryerson, Chicago; Charles A. Parker, Chicago; R. O. Meisenbach, Buffalo, N. Y.; F. H. Albee, New York; R. H. Sayre, New York; J. E. Moore, Minneapolis; A. H. Freiberg, Cincinnati; Newton M. Shaffer, New York, and F. J. Cotton, Boston.

Dr. Paul B. Magnuson, Chicago, read a paper on "Ivory Plates and Screws as a Means of Holding Fractures." Discussed by Drs. F. J. Cotton, Boston; D. B. Phemister, Chicago; J. P. Lord, Omaha; F. H. Albee, New York, and P. B. Magnuson, Chicago.

The following papers were read as a symposium on Pott's Disease:

Dr. D. B. Phemister, Chicago: "A Study of the Fate of Transplanted Bone and of Detached Fragments in Comminuted Fractures."

Dr. Fred H. Albee, New York: "The Bone-Graft Treatment for Pott's Disease, Ununited Fractures and Certain Deformities."

Dr. John Joseph Nutt, New York: "Observations on the Results Obtained by Operating on the Spine for Pott's Disease."

These three papers were discussed by Drs. John Ridlon, Chicago; H. L. Taylor, New York; E. W. Ryerson, Chicago; A. H. Freiberg, Cincinnati; R. H. Sayre, New York; F. D. Cotton, Boston; D. B. Phemister, Chicago; F. H. Albee, New York, and John Joseph Nutt, New York.

Thursday, June 19—Morning

The election of officers was held, which resulted as follows: Chairman, Dr. Leonard W. Ely, Denver; Vice-Chairman, Dr. Nathaniel Allison, St. Louis; Secretary, Dr. Emil S. Geist, Minneapolis; Delegate, Dr. John Ridlon, Chicago; Alternate, Dr. E. W. Ryerson, Chicago.

Dr. Charles A. Parker, Chicago, read a paper on "Hollow Foot (Pes Cavus)." Discussed by Drs. G. L. Bailey, Oak Park, Ill.; J. L. Porter, Chicago; E. W. Ryerson, Chicago; N. M. Shaffer, New York; John Ridlon, Chicago, and C. A. Parker, Chicago.

Dr. Emil S. Geist, Minneapolis, read a paper on "The Rôle of the Tendo Achillis in the Etiology of Weak Foot." Discussed by Drs. C. A. Parker, Chicago; R. O. Meisenbach, Buffalo, N. Y.; F. C. Test, Chicago; N. M. Shaffer, New York, and E. S. Geist, Minneapolis.

Dr. Edwin W. Ryerson, Chicago, read a paper on "The Surgery of Infantile Paralysis." Discussed by Drs. E. A. Rich, Tacoma; F. J. Gaenslen, Milwaukee; R. O. Meisenbach, Buffalo; Nathaniel Allison, St. Louis, and E. W. Ryerson, Chicago.

Dr. H. W. Freuenthal, New York, read a paper on "The Treatment of the Paralysis of Anterior Myelitis." Discussed by Drs. E. W. Ryerson, Chicago; J. L. Porter, Chicago; R. O. Meisenbach, Buffalo, N. Y.; J. W. Cokenower, Des Moines, Iowa; C. A. Parker, Chicago; A. H. Freiberg, Cincinnati; R. R. Fitch, Rochester, N. Y.; J. P. Lord, Omaha, and H. W. Freuenthal, New York.

Dr. Edward A. Rich, Tacoma, Wash., read a paper on "Criticism of Lange's Silk Ligaments in Paralytic Surgery, and Substitutes Therefor." Discussed by Drs. E. W. Ryerson, Chicago; R. O. Meisenbach, Buffalo, N. Y., and E. A. Rich, Tacoma, Wash.

Thursday, June 19—Afternoon

Dr. John P. Lord, Omaha, read a paper on "The Whitman Operation for Talipes Calcaneus Paralyticus. Summary of Results in Eighteen Cases. Lantern Slides." Discussed by Drs. Charles A. Reed, Minneapolis; W. C. Campbell, Memphis, Tenn., and J. P. Lord, Omaha.

Dr. R. O. Meisenbach, Buffalo, N. Y., read a paper on "A Consideration of the Fixed Structural Type of Spinal Lateral Curvature." Discussed by Drs. J. L. Porter, Chicago, and R. O. Meisenbach, Buffalo, N. Y.

Dr. H. W. Orr, Lincoln, Neb., read a paper entitled "The Relation of Politics to the State Care of Crippled and Deformed." Discussed by Drs. J. W. Cokenower, Des Moines, Iowa; E. S. Geist, Minneapolis; G. L. Bailey, Oak Park, Ill.; J. J. Nutt, New York; J. P. Lord, Omaha; A. H. Freiberg, Cincinnati; H. W. Orr, Lincoln, Neb., and A. J. Gillette, St. Paul.

Dr. John Ridlon, Chicago, read a paper on "Osteochondritis Dissecans; Report of Three Cases." Discussed by Drs. A. H. Freiberg, Cincinnati; R. T. Vaughan, Chicago; E. S. Geist, Minneapolis; F. J. Gaenslen, Milwaukee, Wis.; A. H. Freiberg, Cincinnati; John Ridlon, Chicago, and J. P. Lord, Omaha.

Dr. F. J. Gaenslen, Milwaukee, Wis., read a paper on "Disarticulation at the Knee-Joint." Discussed by Drs. E. W. Ryerson, Chicago, and F. J. Gaenslen, Milwaukee, Wis.

Dr. E. W. Ryerson, Chicago, moved that a vote of thanks be given to the Chairman and Secretary of the Section for the able manner in which the meeting had been conducted. Seconded and carried.

Dr. S. C. Baldwin, Salt Lake, made a motion that a vote of thanks be given to all who had so elegantly entertained the members while in Minneapolis. Seconded and carried.

Miscellany

The Opportunity before the Medical Profession.—At a recent meeting of the oldest Paris medical society (founded in 1796) Guelpa spoke on the profound transformation which confronts the practice of medicine, and he lifted the curtain for a glimpse into the future. He says that physicians as yet do not realize their power as guardians of health, and their ability to ward off disease and sustain weakly constitutions. It is within our power to protect intelligent and cooperating patients against diabetes, gout, asthma, possibly tuberculosis, etc. The patients should expect to pay the physician regularly as in the past when he was called to the family for an average number of visits on account of sickness, but this regular annual amount paid to the physician should be for his watchful oversight over the members of the family, steering them away from rocks on which they might make shipwreck. The saving to the family in health, comfort, loss of working time and expense will soon convince the public of the enormous advantages of the plan. Instead of being a man of medicine, the physician of the future will be a biologist, and the pharmacist of the future will be a trained physician whose taste is more for laboratory work and biologic analyses. To illustrate his argument, Guelpa tabulated the metabolic findings in five average supposedly healthy individuals. The first is shown by his table to be on the verge of severe derangement from eating too much, and here Guelpa remarked that the cook is responsible for the health of the family far more than is generally recognized, especially by making the food so tempting that one eats for the taste of the dishes after the appetite is satisfied. He asks what the fate of a department store would be if the buyers for the store were allowed to buy constantly, right and left, whatever struck their fancy without regard to stocks already on hand or the outlet through sales. The health of the family lies in the hands of irresponsible cooks ignorant of the first principles of physiologic requirements. The system is as bad as if 4-year-old children were sent out as the buyers for the big department stores with unlimited credit and no instructions or oversight. The findings in the second table show that the individual is starting diabetes; wisely guided, the tendency may be stopped or kept under control. The third table shows that the individual is throwing off excess amounts of minerals; this suggests that the soil is being prepared on which tuberculosis develops by preference; it is easy at this stage to modify the soil back to normal conditions. The fourth table gives the findings in a case of eczema and one of urticaria; in both the output of nitrogenized elements was far below normal while that of non-nitrogenized elements was far above. The diet was then regulated to increase the proportion of nitrogenous elements and reduce the intake of the non-nitrogenized, and the eczema, which had previously resisted all measures, rapidly subsided. The waste from the excessive non-nitrogenized elements had evidently been mainly responsible for maintaining the eczema, as the diet had been restricted to milk, vegetables and carbohydrates. Changing the dietetic restrictions to the opposite was speedily followed by a complete cure. Guelpa adds that the transformation of the practice of medicine along the lines of biology is the logical application of the progress in the medical sciences of recent years. The task thus set before us is beyond question the most exalted, the most delicate and the most useful of all social missions. His article is published in the *Bulletins de la Société de Médecine de Paris*, 1913, p. 401.

Suitable Employment for Epileptics.—Dr. Matthew Woods, in the Philadelphia *Public Ledger*, calls attention to the frequent automobile and other accidents occasioned by the employment of epileptics. He recites a number of instances of such accidents from his case books in which not only the lives of the individuals themselves, but also the lives of others were jeopardized by sudden attacks of epilepsy in the afflicted person. As instances of the unwise employment of epileptics, he mentions the case of a painter who fell while working on a high scaffold, and a coachman with petit mal who on three occasions nearly caused the death of three different employers and their families, and in a fourth instance almost killed himself and his employer by an accident in which the carriage was smashed. In another instance a chauffeur was killed in an accident during an attack. He had previously never had anything but nocturnal attacks. Another person was caught in a belt in a machine-shop and fatally injured. A barber in a sudden convulsion almost cut off the nose of a customer. In another instance an epileptic nurse, in a convulsion, fell down stairs with a child in her arms, which resulted in crippling the child for life. Other instances of unsuitable occupations are those of stationary and locomotive engineer. The employment of epileptics in positions which require the most constant and alert attention such as those of chauffeur or engineer, or in occupations which subject them to the hazard of dangerous positions or proximity to machinery should of course never occur; yet it is necessary that these persons should be provided with suitable occupations. Dismissing epileptics into idleness is not a protective measure, for they may do more damage than when suitably employed. While not all epileptics are curable, it is recognized that occupational activities in safe places constitute an important factor in their treatment and care.

Necessity for Cultivating Skill in Clinical Diagnosis.—The modern, up-to-date physician has seen many mechanical appliances and expert chemical processes evolved and perfected for purposes of accurate diagnosis, all of which are extremely valuable additions to the doctor's armamentarium; but in *no* wise should they supplant the acquirement and cultivation of the delicate touch so essential in the palpation of a cardiac thrill, a vocal fremitus or a bone crepitus. The unaided ear should still be able to discriminate and differentiate the delicate and characteristic pneumonic sounds in a mediate auscultation; the eye, aided only when needed by a corrective lens for its refractive error, should appreciate and interpret a peristaltic wave, a latent convergent squint, or a decubitus characteristic of pneumonia; and even the olfactory sense organ should be so expert that a characteristic odor of an intestinal perforation during a laparotomy, a secluded case of small-pox, or a sapremic puerperal infection may be opportunely recognized. In short, this sense perception of the physician should be so acutely developed and trained that these complementary adjuncts will not have to be wholly relied on, and were this expert training of the sensorium carried into daily practice there would be fewer failures in diagnosis and fewer quacks now in operation. Yet, who will doubt the practical utility of a well-equipped clinical laboratory? The physician's own private laboratory facilities should consist of more than the traditional rack of dirty test-tubes. A microscope with slides and other equipment for making smears, a blood-counting apparatus with a hemoglobin scale, an apparatus for stomach analysis, a bedside Widal, a centrifuge, a blood-pressure apparatus and even an ophthalmoscope and a cystoscope are articles deserving of as prominent a place in a physician's equipment as a stethoscope and a clinical thermometer.—Clinton E. Spicer, M.D., in North Dakota State Med. Assn.

Hygiene and Decency: or Sentiment in Sanitation.—Travelers may often see in railway carriages in Italy the notice—*Per Igiene e Decenzia non Sputare* (For Hygiene and Decency do not Spit.) There is here a lesson for sanitarians. Dirt is not always deadly or even dangerous, and those who teach that dirt is necessarily disease-producing will find difficulty in explaining the often long-continued and robust health of workers in sewers or on streets or about garbage-piles or in stables or dusty trades. . . . The fact is that sentiment—doubtless fortunately—still plays a mighty part in the world, and that the public is, and ought to be, glad to pay for decency as well as for safety in food and drink. The moral is obvious. . . . Teachers of hygiene and sanitation should not forget to enforce the idea that these sciences stand for cleanness hardly less than for disease prevention. Some cities with dirty streets very likely have lower death-rates than some with clean streets; some families in dirty homes less sickness than some in clean ones; and yet it does not follow that cleanness is superfluous. Fire and death very likely do not occur any less often among the insured than among the uninsured, but when they do occur the insured are better off, and this is probably the basis of the general opinion of mankind that both fire-insurance and life-insurance are worth while. It is very likely for some such reason as this that public opinion requires cleanliness—an opinion which like many other opinions has finally become a sentiment; for cleanliness is a kind of insurance—not always sufficient to prevent disease but always worth while.—*American Journal of Public Health.*

Effect of Belt Constriction on Hunger.—Investigations were undertaken by Prof. Dr. Rudolf Lennhoff, as reported in the *Vossische Zeitung*, to ascertain in what manner constriction about the body in the region of the stomach lessens hunger, which is a plan sometimes followed by hungry tramps and others. Metallic substances were mixed with solid food, such as potatoes, and fed to men. The x-ray revealed that a contraction of the stomach took place and a relatively small quantity of the food proved sufficient to satisfy the appetite. When liquid food was given, the contraction was considerably less and a larger quantity was necessary for satiation. Another experiment, in which the liquid food was introduced through a tube showed that twice the quantity was required to produce satiety. The conclusion was that the stimulus of swallowing by reflex action caused contraction of the stomach and produced a lessened sense of hunger. This suggested that artificial pressure over the stomach by means of a belt, as in the case of the tramp, produced the effect and this proved to be the case. In order to eliminate the effect of suggestion, the experiment was tried on insane persons who were allowed to eat as much as they pleased; during the experiment they ate less. The conclusion is that the sense of satiety is influenced by the act of swallowing which causes contraction of the stomach.

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THE FATE OF INGESTED PROTEIN

Although the form in which protein is absorbed from the lumen of the intestine is fairly well understood, the fate of the products of its alimentary breakdown is by no means so clear. Recently we referred to some of the experimental evidence on the travels of the amino-acids in the circulation to the tissues and their ultimate conversion to urea.[1] Quite irrespective of the form in which the nitrogenous material is conveyed to the tissues, the speedy occurrence of an increased elimination of nitrogenous substance in the urine after a meal of protein is undeniably suggestive that somewhere there is a prompt disintegration of nitrogen-yielding compounds. It is by no means necessary to assume that the postprandial increase of urinary urea is derived directly from the material ingested at the meal, for it is also conceivable that the nitrogenous waste arises from the breakdown of effete protoplasm which is discarded when a new supply of repair material is available. Some physiologists have maintained in the past that ingested protein must be built up into tissue products before it is again catabolized. Pflüger, for example, contended that the food protein must first become an integral part of the living protoplasm before it can be utilized.

If it were true that the absorbed food protein, unlike the living tissue protein, is not readily catabolized, one would be obliged, in view of the undisputed rapid rise in the output of nitrogen in the urine after a meal, to assume an extraordinarily rapid synthetic process followed at once by an equally rapid disintegrative change to account for the known phenomena. Protein contains both nitrogen and sulphur, and these elements exist in certain relations to each other in the typical albuminous compounds. This fact makes it possible to determine with some probability whether the urinary end-products are really derived from degraded tissue or from unsynthesized amino-acids speedily distributed in the organism after their absorption. If it be the former, then the excreted material ought to bear some definite percentage relationship to the normal protein of the body; for example, the ratio of sulphur to nitrogen in the urine should approximate to that of the average tissue as obtained by the study of the sulphur and nitrogen ratio in complete starvation when the tissues alone furnish the catabolites.

Data lately presented by Drs. Cathcart and Green[2] of Glasgow University offer added evidence that the rise in the output of nitrogen and sulphur after a protein meal is due to the catabolism of the actual material ingested. The sulphur-containing moiety of the protein after ingestion is, as a rule, more rapidly catabolized and the sulphur more rapidly excreted than the nitrogen. The S : N ratio in starvation, when all of these elements excreted must come from an endogenous source, is about 1 : 15. After the ingestion of egg albumin (with a S : N ratio of 1 : 8), the urine ratio was found to be 1 : 9.8. This would scarcely be expected if it were organized tissue protein that furnished the urinary constituents. Perhaps, in order to obtain a true picture of the protein exchange in the body, it will be necessary hereafter to consider the fate of the sulphur as well as the nitrogen in the excretions.

PUBLIC HEALTH LEGISLATION IN ALASKA

Health conditions among Alaskan natives and residents have been the subject of much-needed consideration of late. The Journal has noted from time to time the results of special surveys of the prevalence of disease in Alaska and has urged that effective measures be adopted to combat preventable disease in this territory. Such measures should embrace provisions for sanitary oversight of all communities, for compulsory sequestration of contagious diseases, for a quarantine system against the introduction of epidemic diseases from without, for hospital care of selected cases, especially of tuberculosis and trachoma, for popular education in personal and public hygiene and for the collection of vital statistics. An Alaskan board or commissioner of health is needed with sufficient assistants and ample appropriations.

Realizing the need of such action, the Governor of Alaska took up the question of federal supervision of public health measures with the federal authorities at Washington. It was suggested by the Secretary of the Treasury on April 19 that the Alaskan territorial legislature should enact a proper health code and make appropriation for its enforcement. The secretary gave assurance of federal maintenance of maritime and border quarantine, and of federal provision for such measures as might be necessary to prevent the spread of cholera, typhus, yellow fever, small-pox and bubonic plague in the interior of Alaska. The national government would also cooperate with the territorial government in the control of other contagious and infectious diseases.

In accordance with these suggestions, there has been introduced into the house of the Alaskan territorial legislature a bill[1] to provide for the registration and restriction of communicable diseases in Alaska. This bill constitutes the governor ex-officio commissioner of health and empowers him to designate a licensed physician in each judicial district as assistant commissioner of health. The commissioner is to have general supervision over the interests of health and life in the territory. He is authorized to make all necessary quarantine regulations, to provide for the disinfection of infected premises, and the removal of dead bodies, rubbish, garbage and other things inimical to health preservation. When necessary he is to consult with federal officers on matters pertaining to sanitation and hygiene.

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[1] The Mechanism of Protein Assimilation, editorial, The Journal A. M. A., May 17, 1913, p. 1546.

[2] Cathcart, E. P., and Green, H. H.: The Rate of Protein Catabolism, Biochem. Jour., 1913, vii, 1.

[1] House Bill 80, Territory of Alaska, first session.

The act will make each school district a health district with its own board of health, to be composed of the president of the school board, and two citizens chosen by the school board, of whom, whenever practicable, one shall be a licensed physician. In native villages any representative of the United States Bureau of Education shall have the authority and powers granted to local boards of health. An important section relates to the definition of communicable diseases. Exposure or infection of person or articles with the following diseases renders them subject to the provisions of the act: plague, cholera, small-pox, yellow fever, typhus, typhoid, leprosy, scarlatina, measles, diphtheria, infantile paralysis, cerebrospinal meningitis, erysipelas, whooping-cough, glanders and mumps. In addition all cases of pulmonary tuberculosis and trachoma, when the usual precautions against spreading the disease to others are wilfully neglected, and when other persons are liable to become infected because of this negligence, are to be considered capable of conveying contagious or infectious disease. The diseases here enumerated are made subject to notification within twenty-four hours of their discovery.

This bill marks a long step of progress in the sanitary and hygienic history of Alaska. Its passage should be hastened and supported by ample appropriation. The territory of Alaska is now entering on a new era of substantial development which requires fundamentally adequate provision for the control and maintenance of the public health.

THE BACTERIA IN EGGS

There can be no doubt that the contents of fresh eggs are at times perfectly sterile. It was this fact that enabled Schottelius, in his now classic experiments on life without bacteria, to hatch chickens under sterile conditions and keep them free from micro-organisms in a sterile atmosphere with sterile food and drink. It is equally true that fresh eggs from apparently healthy hens may contain bacteria; and according to the investigations of Rettger at Yale University it is now demonstrated that the organism causing the white diarrhea of chicks, *Bacillus pullorum*, is transmitted in the egg itself. The questions of how frequently, where and in what manner eggs become containers of bacteria are of serious import in relation to the food industry. On the knowledge of these matters the success and the technic of the preservation of eggs for purposes of food must ultimately rest. If organisms commonly enter the egg during its passage down the oviduct of the fowl we are face to face with a source of bacterial contamination with which we cannot cope directly. If it be demonstrated, on the other hand, that the bacterial invasion of the shell takes place at the time of laying or that the penetration by micro-organisms comes subsequently, preventive or palliative measures can be planned more intelligently and effectively.

Several years ago Dr. Pennington of the U. S. Department of Agriculture reported an elaborate study of fresh eggs of known history and examined from the bacteriologic point of view.[1] Her findings indicate that organisms are usually to be discovered in both the yolk and white. Only 12 per cent. of all the eggs examined were sterile when tested. There were minor variations in respect to the incidence of season, breed and fertilized and unfertilized specimens which need not concern us here. What is more significant is the great array of species to which the egg organisms belonged—thirty-six species in the hundred eggs from which the varieties were isolated. Molds and yeasts were not missing.

Kossowicz[2] of Vienna has not been content with these findings, which he regards as unjust to the inherent sterility of really fresh hen's eggs. By way of critique he remarks on the dangers of air contamination incident to the manipulations in investigations of this sort. Such charges would have little weight except for the fact that the Austrian bacteriologist himself has found that fresh eggs are as a rule free from bacteria. They are, however, very easily invaded by micro-organisms of the most objectionable character within comparatively brief periods. This is true despite the protective shell which encloses the putrescible parts; it is particularly true under the conditions of careless handling and transportation in the trade. Not merely bacteria, but yeasts and molds as well can find their way through the intact shell and membranes of the egg with comparative ease. According to Kossowicz old eggs are invaded with greater ease than are fresh ones; and the spilled contents of spoiled eggs furnish a peculiarly effective agent for the penetration of others contaminated by them.

As a mode of preserving eggs the cold-storage process easily ranks first. If it is true that as a rule freshly laid eggs are sterile, every inducement to avoid sources of bacterial contamination as far as possible is offered to those who wish to conserve them in perfect condition. Cleanliness in handling must be an important feature. When the effective method of preservation by low temperature cannot be applied, the use of solutions of lime and especially of sodium silicate or water-glass, deserves primary consideration. These processes, applicable in the home itself, are beginning to be widely advertised and appreciated in this country.

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[1] Pennington, M. E.: A Chemical and Bacteriologic Study of Fresh Eggs, Jour. Biol. Chem., 1910, vii, 109.

[2] Kossowicz, A.: Die Zersetzung und Haltbarmachung der Eier, J. F. Bergmann, Wiesbaden, 1913.

EXPECTATION OF LIFE

So much has been said in recent years about the saving of life by the development and enforcement of sanitary regulations, especially by the gradual but steadily progressive reduction in the death-rate from infectious diseases of all kinds, and above all those from which children suffer, that it is well to know exactly how the expectation of life has been modified during the last three or four decades while our sanitation has been undoubtedly advancing in efficiency. The opportunity for the study of comparative mortality at different periods of life and of expectation of life is afforded by the publication of a life-table by the department of health of New York City, a preliminary report of which occurs in the *Weekly Bulletin* of the department for May 31, 1913. A life-table, according to the dictionary, is "a statistical table showing the number of people, out of a given number, that will probably reach different ages," and this is the first time that the New York City Department of Health has prepared such a document. It is all the more interesting because it permits a comparison with the results of a similar document prepared under the direction of the late Dr. John S. Billings in 1882 for the federal census. That table was based on the mortality statistics for the triennium 1879-1881. The present table takes the same statistics for the corresponding three years 1909-1911, inclusive, just thirty years later.

In New York City a child under 5 years of age had an expectancy of life thirty years ago of forty-one years. A child of the same age at present may look forward to living on the average fifty-two years, an increase of eleven years. The expectancy of life has increased much less for each of the succeeding five-year periods. The life of a child between 5 and 10 years has now an increase of expectancy of only five years more than was the case thirty years ago. As the age increases, the expectancy of life at present grows more nearly equal to that of thirty years ago. An adult aged from 25 to 30 years had an expectancy three decades ago of about 32.6 years, while at present the expectancy of life at this age is 34.3 years, an increase of only 1.7 years. With the attainment of the age of 40 the situation is reversed and the expectancy of life is actually less than it was a generation ago. Persons between 40 and 45 years of age had an expectancy of life of 23.9 in 1882, and at present have only 23.4 years to look forward to —a decreased expectancy of six months.

The present New York life-table further shows that there is a constant diminution of life expectancy from the fortieth year onward. This is not very great, however, for even at the age of 85 years the expectancy of life at present is only three years and three months less than it was thirty years ago. This increased mortality in recent years during the fifth decade of life and later is ascribed to the greater prevalence of cancer and diseases of the heart and kidneys. The so-called degenerative diseases take more victims than before. The death-rate from the infectious diseases has been greatly lowered, and children's and young persons' lives are thus saved, but many of these young people who are now kept in life lack resistive vitality to degenerative processes or fall victims after 40 to the terminal conditions consequent on the failure of important organs to maintain their efficiency. The New York life-table also attributes the increased mortality after middle life to the greater consumption of spirituous liquors and of nitrogenous articles of diet than were commonly used even a generation ago. The wear and tear of the strenuous existence of modern city life, particularly associated with insufficient physical exercise in the open air, are also made responsible for some portion of the increase in mortality.

There is a distinct difference between the expectancy of life among males and females. On the whole this is greater among females than among males before 40 years of age, while after 40 the reverse is true. During the past three decades the increase in the expectancy of life has favored females before 40, but has been against them after that time. "Among males at all ages the increased expectancy of life up to 40 years of age amounts altogether to almost twenty-five years, while among females it amounts to twenty-nine years. After the beginning of the fifth decade, however, diminished expectancy of life among males is fifteen years and among females eighteen years."

The most important results from advancing sanitation are found among the very young. At all times up to 40, however—and as a rule a good deal of men's best work is accomplished by that time—there are a greater number of people living for the number born than ever before. The increased mortality from 40 years of age on adds a good deal to the world's suffering because between 40 and 60 men are of much more importance to those around them, and there is much more of serious loss because of their deaths; but on the whole there is a distinct gain to be chronicled.

ACID DIABETES

The term "mobilize" has begun to find an application in physiology. Originally used to express the preparation of an army for active service, mobilization is at present also made to indicate the process of starting various body components on their physiologic road. Thus it has come about that one reads, for example, of the mobilizing of uric acid, or of carbohydrates. As so often happens, a suitable euphonious word is made to cover the uncertainties of current information. Undoubtedly, however, there are numerous conditions under which the glycogen stores of the organism are mobilized. In consequence they furnish readily available sugar for distribution to the tissues if sugar is needed. When the mobilization exceeds the actual call for carbohydrate in metabolism and when it is provoked by abnormal occasions, the excess may give rise to hyperglycemia and glycosuria. Here we enter the domain of the pathologic.

The theories to account for the excessive formation of sugar through what may be termed the "mobilization" of glycogen are legion. They bring us into the field of diabetes with its etiologic uncertainties and perplexing problems. Perversions in the functions of the ductless glands have been held to account for many of the phenomena; but such assumptions do not remove the veil of obscurity. Anatomic lesions or chemical compounds always convey a clearer impression of pathologic possibilities than does the mention of "functional" disturbances, though in ultimate analysis the latter must rest on physical or chemical factors. Hence there is something seemingly concrete and definite in the idea of an "acid diabetes" which has been formulated in von Noorden's clinic at Vienna.[1] It is based on experiments in which acids were introduced into the circulation of animals and the effects on various carbohydrate factors noted. Even small quantities of acid suffice to "mobilize" glycogen, liberating it from the liver in very considerable amounts, with hyperglycemia and glycosuria as a result. It appears as if the adrenals, usually given a prominence in the genesis of such conditions, were not immediately involved in this diabetic upheaval.

There are conditions of disturbed metabolism in which acids are known to arise in the organism. Consequently the possibilities brought out by these purely experimental devices may experience an actuality under readily conceivable pathologic conditions. This is not the first time that the acid products of intermediary metabolism have been called on to function as regulators of physiologic processes.

Current Comment

MEDICINE LEADING IN EDUCATIONAL PROGRESS

A bulletin[2] issued recently by the United States Bureau of Education contains an interesting chapter on the standards of medical schools. After a brief history of these standards prior to 1900 the bulletin says: "A phenomenal fruition has come, however, in the last half dozen years, due chiefly to the conferences and work of the Council on Medical Education of the American Medical Association. . . . No more marvelous chapter in the history of educational standards can be found than in a review of the work of these conferences as shown by the report for the first five years." Further the bulletin says: "The practical bearing of medical education on the life and death of mankind has made its development and coordination with general education more than an academic question and has accelerated the movement for the solution of several educational problems. It has made clear that the detached professional school must become an *integral part* of a university, that commercialism . . . must be displaced and that educational institutions must be supplemented by the state in medical practice acts and expert examining boards. The advances of science and of medicine by which medicine is the *application of science* . . . to the prevention and cure of disease, have made such drafts on the time of the student and so added to the cost of instruction, that a reorganization of education *outside* medicine from the bottom to the top has been demanded." It is apparent, therefore, that the largely attended educational conferences conducted by the Council on Medical Education and the wide publicity given by THE JOURNAL to the reports of these conferences and to educational statistics collected from various sources, have not only produced *remarkable improvements in medical schools* but also have exerted *a strong influence toward the solution of problems in other lines of education.* The work of the Council in inspecting and standardizing medical schools has doubtless led to the efforts now being made toward standardizing colleges of liberal arts and universities. Surely it is time accurate information should be available regarding the actual conditions under which all degrees in this country are granted. Even in this "land of the free and home of the brave" conscienceless educational institutions should not be given unlimited license to peddle out degrees at so much each, or without requiring a reasonable minimum of knowledge for those degrees and the public should have the right to know for each institution what that minimum is. In its campaign for better medical schools, the American Medical Association has shown how results are to be obtained—first, by thorough investigation and second by giving extensive publicity to the conditions found.

THE FUNCTION OF THE BILE

The alimentary functions of the bile, once a theme for prolonged debate in physiology, have ceased to arouse polemic interest. The recent advances in the study of digestion have served to elucidate the uses of the secretions poured into the gastro-intestinal tract to such a degree that every medical student of to-day can gain a clear-cut conception of the part which they play. The relationship of the bile to the absorption of the products of fat digestion is thoroughly appreciated, particularly owing to numerous studies of the events which follow the failure of this hepatic secretion to enter the digestive tube. Ingested fat then fails to be utilized properly; but the absorption of the other food derivatives is affected only in so far as the presence of the residual insoluble products of fat digestion inhibits the appropriate digestion of the accompanying nutrients and mechanically interferes with their transport into the blood-stream. Observations of patients having a complete biliary fistula have repeatedly borne out these statements. So long as an excess of fat in the diet is avoided, the nutritive functions appear to proceed satisfactorily even in the absence of the bile. If further proof were needed it could be found in the interesting report of Dr. Parker's case of a child aged 4 years, with complete

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[1] 1. Elias, H.: Ueber die Rolle der Säure im Kohlenhydratstoffwechsel. Ueber Säurediabetes, Biochem. Ztschr., 1913, xlviii, 120.

[2] 2. MacLean, George Edward: Present Standards of Higher Education in the United States, Bull. 4, 1913, U. S. Bureau of Education.

Greensboro; ninth district, Dr. D. J. Hill, Lexington, and tenth district, Dr. M. L. Stevens, Asheville. Dr. John R. Irvin, Charlotte, was elected orator, Dr. A. S. Pendleton, Raleigh, essayist, and Dr. Davis S. George, Marshallburg, leader in debate. Raleigh was selected as the place of meeting for 1914. Dr. Albert Anderson, Raleigh, is chairman of committee on arrangements.

OHIO

New Officers.—Dayton Medical Society, June 13: president, Dr. Charles J. Otto; secretary-treasurer, Dr. J. F. Wuist.

Medical Board Changes.—Dr. T. T. A. McCann, Dayton, has been elected president and Dr. Lee Humphrey, Malta, vice-president of the State Medical Board.

Dentist on State Health Board.—Homer C. Brown, D.D.S., Columbus, has been appointed a member of the State Board of Health, vice Dr. Frank Warner, Columbus.

Weber Memorial Fund.—As a memorial to the late Dr. Gustav C. E. Weber, his friends and brethren practitioners have undertaken to create a suitable fund, the income of which will be used to provide worthy students with free access to the medical library of the Cleveland Library Medical Association.

Personal.—Dr. O. J. Chaney, Piqua, sailed for Europe, July 1.——Dr. E. A. Baber, Dayton, has been fully exonerated of charges of neglect of duty and improper conduct preferred by Dr. J. Val. Koch, Dayton.——Dr. J. W. Clark, physician at the State Penitentiary, Columbus, has resigned to take effect September 15.

GENERAL

Elections.—The twenty-fourth annual meeting of the Baltimore and Ohio Railroad Surgeons Association was held in Pittsburgh, June 10-12, and the following officers were elected: president, Dr. John Palmer, Jr., Wilmington, Del.; vice-presidents, Drs. Page Edmunds and J. F. Tearney, both of Baltimore; secretary-treasurer, Dr. E. E. Johnston, Baltimore.——At the ninth annual meeting of the American-Medico Psychological Association held in Niagara Falls, Ont., June 10-13, the following officers were elected: president, Dr. Carlos F. MacDonald, New York City; vice-president, Dr. S. E. Smith, Richmond, Ind., and secretary, Dr. Charles G. Wagner, Binghamton, N. Y., (reelected). The association will meet in Baltimore next year.

Honor to American Physician.—In recognition of valuable services rendered in the organization of a Red Cross Society in China and of his practical work during the revolution, a silver medal has been presented to Dr. R. A. Bolt, director of the Tsing-Hun Medical College of Peking. The inscription on the medal reads: "The vice-president of the Republic of China and Tutu (military governor) Li, in recognition of services rendered during the revolution of 1911 among the People's Army, discovered that Dr. R. A. Bolt effectively and industriously saved and nursed the suffering wounded. It is, therefore, fit to confer on him a silver medal in order to show our appreciation of his merits (services). We also issue to him this certificate as a pledge of our faith in his services. On the one hand we confer this upon Dr. Bolt, which, on the other hand, he duly receives."

The Coming Clinical Congress.—The Clinical Congress of Surgeons of North America will hold its fourth annual session in Chicago, November 10-15. A complete program of clinics is to be held on each day from 8 a. m. to 5 p. m., covering every branch in surgery. The general headquarters of the Congress will be at the Hotel La Salle, where the eighteenth and nineteenth floors have been reserved for registration room, bulletin rooms, etc. The headquarters of the section on surgery of the eye, ear, nose and throat will be at the Hotel Sherman and at each of these headquarters the daily clinical program will be bulletined one day in advance. On each evening of the week except Saturday, there will be scientific sessions, and on Tuesday, Thursday and Friday evenings, special meetings will be held for those interested in surgery of the eye, ear, nose, throat and mouth. Dr. E. Wyllys Andrews is chairman of the committee on arrangements and Dr. Franklin H. Martin general secretary of the Congress.

Bequests and Donations.—The following bequests and donations have been announced:

Mt. Sinai Hospital, New York City, $100,000, New York Infirmary for Women and Children, $10,000, the ladies' auxiliary of Mount Sinai Hospital and Montefiore Home, each $5,000, and a donation made for the poor, convalescent or persons in delicate health, $1,000,000, by the will of Mrs. Caroline Neustadter, New York City, formerly of San Francisco.

Tuberculosis Hospital for Chautauqua County, New York, $150,000 and Brooks Memorial Hospital, Dunkirk, $6,000, for the endowment of a bed to be used by poor patients of Fredonia, by the will of Mrs. Elizabeth M. Newton. Fredonia.

Homeopathic Hospital, Pottstown, Pa., $25,000 by the will of Dr. Annie M. Hawley.

Presbyterian, Jewish, Wills Eye and Pennsylvania hospitals, Philadelphia, each $5,000 by the will of the late Henry B. Palethrop.

Pennsylvania Hospital, Philadelphia, $5,000, Home for Incurables, Philadelphia, $3,000 by the will of the late Charles M. Morton.

St. Luke's Hospital, South Bethlehem, Pa., $35,000 for the erection of a woman's and a convalescent ward, a donation by Eckley B. Coxe, Jr.

Cambridge (Md.) Hospital, four acres of land adjoining the institution, valued at $10,000.

University of California, a donation of $150,000 toward the construction of a medical research teaching hospital by John M. Keith, as a memorial to his wife.

Methodist Hospital, Indianapolis, a donation of $5,000 for the establishment of a free bed in the orthopedic department in the memory of the Rev. Samuel W. Thomas, D. D., and his wife, Margaret Thomas, by their sons.

Mount Sinai Hospital, Milwaukee, $23,000 subscribed toward the hospital fund.

Abington (Pa.) General Hospital, a donation of $50,000 toward the building fund by George W. Elkins.

FOREIGN

For the Study of Cancer.—Arthur James, London, announces that he has decided to give the income of $100,000 to the Middlesex Hospital, London, in memory of his brother, William James, for the investigation of the causes of, and the search for a cure for, cancer.

Eminent Surgeon Dies.—Sir Jonathan Hutchinson, M.R.C.S. Eng., 1850; F.R.C.S. Eng., 1862; one of the most eminent surgeons of England; died at his home in Haslemere, June 23, aged 84. Mr. Hutchinson was president of the Royal College of Surgeons in 1889-90, Hunterian professor in the Royal College of Surgeons, member of the Royal Commission on Smallpox Hospitals in 1884 and of the Royal Commission on Vaccination in 1890-96. He was knighted in 1908. He was a frequent contributor to the literature of surgery and dermatology. Among the best known of his productions are those on Fish Eating and Leprosy, Rare Diseases of the Skin, The Pedigree of Diseases and Manual of Syphilis.

LONDON LETTER

(From Our Regular Correspondent)

London, June 21, 1913.

The Government Inquiry into Nostrums

At the last sitting of the committee appointed by parliament to inquire into the advertisement and sale of proprietary remedies, Dr. A. W. J. MacFadden, chief inspector of foods under the local government board which undertakes the analysis of foods and drugs to insure that they are the proper standard, gave evidence. At present proprietary medicines are exempt from investigations by the board, but representations have been made in favor of removing this exemption. Dr. MacFadden believed that the control of proprietary medicines could not be secured by that method unless there was required a full declaration of the nature and amounts of ingredients, which would have the force of a warranty. He recommended that a censorship of medicines and labels should be set up, not to deal with all advertisements but with those brought to the notice of the authorities. It would be necessary for the maker's formula to be disclosed, but that could be done in confidence.

Mr. Guy Stephenson, assistant director of public prosecutions, suggested that a staff of inspectors or other officials might be created whose duty it would be to look out for offenses with regard to proprietary medicines, and to make a search of the files of newspapers for undesirable advertisements. They would also purchase medicines and submit them to an analyst. To be effective, the statement on the label of the formula, as suggested by the British Medical Association, would have to be couched in popular language.

Dr. W. P. Norris, chief medical officer for the Australian commonwealth in London, and until recently director of quarantine and medical adviser under the commerce act to the commonwealth, explained why the commonwealth government had undertaken restrictive action in regard to nostrums. Following the inception of the commonwealth (the union of the various Australian colonies) the protection of the public in regard to the sale of secret remedies was discussed in the House. The result was the commerce act of 1905. This deals with a large number of matters as regards false trade descriptions, and contains a special section on food and medicines.

The principles on which the regulations are based are as follows: For the protection of the purchaser an extravagant description is prohibited. It is held that the people, relatively ignorant on such subjects, need protection from exploitation which might waste their substance, and that a competent diagnosis is essential for rational treatment. Secrecy with regard to the composition of remedies for purposes of gain is held to be wrong. It is held that any person engaged in the proprietary medicine trade may reasonably be required to manifest in the descriptions and recommendations of a preparation a knowledge and appreciation of the facts of medical science and practice, and that all useful remedies are the product of pharmacologic and related clinical practice.

These principles are carried out as follows: In some cases a special label must be placed on the packet or the declaration of specific therapeutic agents is required. Dr. Norris gave examples of advertising matter that is not permitted unless satisfactory proof of its good faith is given. Such are the claims that a remedy is unique; that the maker is the "discoverer" of the remedy; that the remedy is prepared "from a famous doctor's formula." Doctors' testimonials are investigated as far as possible, and testimonials from pharmacists are objected to. Invitations to correspond with the makers are not encouraged. The term "lightning cough cure" or "the only cure" would not be accepted. Alcoholic beverages are not allowed to be sold as medicines. "Guarantees of cure" are objected to, not only on account of the unsoundness of the claim, but also because it is found that very few of the so-called guarantees are such in law. In the case of remedies for gonorrhea the following statement is required to be placed prominently on the label: "If the disease does not yield promptly and completely to treatment, medical assistance should be obtained at once. The danger of spreading the disease even after apparent cures is very great, and a reliable medical opinion as to cure should be obtained always."

Scientific Research on Mental Deficiency

In previous letters to The Journal the government bill for dealing with mentally defective persons has been described. So far it contains no provisions for medical research. The home secretary has therefore received a memorial signed by the leading medical teachers pointing out the importance of such provisions as would secure continuous research into the conditions on which such deficiency depends, and the means by which it might be remedied or prevented. It is added that mental deficiency must be due either to defective formation and development of the active structures of some portion or portions of the brain, or to defective formation or supply of the fluids by which these structures are surrounded and by which they are stimulated to activity. The possibility of the latter is shown by the comparatively modern discovery that one common form of idiocy depends on absence of the thyroid secretion. The defective persons to whom the bill applies are by no means of a uniform type, and there is much reason to hope that any treatment useful in the case of the lower members of the series would prove still more useful in raising the level of those above them and would furnish at least the first step toward a system of education founded on physiology. It is also probable that imperfect brain development and the simple intellectual functioning of defectives when carefully studied may throw valuable light on the more complicated acts of the normal individual. So far the mentally defective have been excluded from scientific observations. Either they have been wholly neglected, often in miserable surroundings, or they have been collected in institutions maintained either for profit or from philanthropic motives. These institutions have produced kind and skilful managers but have done nothing to increase our knowledge of the nature, causes and treatment of mental deficiency. The mental deficiency bill will probably bring together many subjects into one institution controlled by the state. It is of high importance that the facilities for scientific study which such institutions afford should be utilized by men of science fully conversant with all that is already known on the subject and able to point out the directions along which further inquiry should be pursued.

PARIS LETTER

(From Our Regular Correspondent)

Paris, June 13, 1913.

Election of a Permanent Secretary to Academy of Medicine

On June 10 the Académie de médecine elected a permanent secretary in place of the late Professor Jaccoud. As we anticipated in a previous letter, Dr. Debove, professor of clinical medicine at the Faculté de médecine de Paris, was unanimously elected. Dr. Debove was born in Paris March 11, 1845. He received his degree of doctor of medicine in 1873 and became *agrégé* in 1878 and professor in 1890. He became a member of the Académie de médecine in 1893, and in 1901 succeeded Brouardel in the functions of dean of the Faculté, which he fulfilled until 1907.

Death of Professor Vergely

Dr. Paul Vergely, formerly professor of general pathology and therapeutics at the Faculté de médecine de Bordeaux, and correspondent of the Académie de médecine, has just died, aged 75.

Third Meeting of the French Medicolegal Society

Among the questions discussed at this meeting, which was held in Paris, May 24-27, a certain number presented sufficient interest to be reported.

THE VALUE IN LEGAL MEDICINE OF RECENT METHODS OF DIAGNOSIS IN SYPHILIS

Dr. G. Thibierge, a physician of the hôpital Saint-Louis, said that the new laboratory methods permit the introduction into the medicolegal diagnosis of syphilis of important elements, permitting the affirmation more categorically than by clinical observations alone that certain lesions are syphilitic and certain persons are syphilitic; but they do not permit us to say that certain other lesions or that certain other patients are not syphilitic, or that a certain person who is syphilitic at the moment of examination was or was not so at a certain previous time, or that he became so through a given act. Therefore they leave in doubt important questions which are among the first that are asked of a medicolegal expert. Nevertheless they can, and in certain cases they should be used in medicolegal examinations, on account of the evidence which they can sometimes give. But neither the expert nor the judge is to look upon them as final, but as only one element in the diagnosis of syphilis which ought to be appreciated at its own value and utilized according to the circumstances of the case. In syphilis as in other diseases laboratory methods are the basis on which the diagnosis of syphilis should rest.

ACUTE CARBON DIOXID POISONING

Dr. Balthazard, *agrégé* in legal medicine at the Faculté de médecine de Paris, brought out the importance of the coefficient of poisoning. By this is meant the relation to the total hemoglobin in the blood of hemoglobin which has been rendered useless by being combined with carbon dioxid. Dr. Niclous, *agrégé* of chemistry at the Faculté de médecine de Paris, said that in all the experiments done by Gréhant and himself on animals ranging from the bird to the dog, the coefficient of poisoning averaged 0.66. In the fifteen cases of carbon dioxid poisoning in which he and Balthazard made examinations, the coefficient varied between 0.5 and 0.75, the greater number averaging 0.6 as in the animals killed by carbon dioxid. Therefore it would appear difficult not to attribute to a coefficient of poisoning of 0.66 a significance when there is a question of death due or not due to carbon dioxid. If one is called on to pronounce in a case in which the coefficient of poisoning is much different from 0.66, one should not hesitate to say that it is not a case of carbon dioxid poisoning and to look for a different explanation for death.

THE QUESTION OF SURVIVAL

When several persons in the same family are killed in an accident such as a conflagration, shipwreck or railway accident, the courts are obliged to determine who died first in order to settle the estate. When the circumstances of the case do not permit this question to be settled by evidence, the civil code always presumes that it was the stronger who survived. In order to know who was the stronger the law says that the point is to be determined according to age and to sex. If those who died together were less than 15 years of age, the older is presumed to have survived; between the ages of 15 and 60 the younger is presumed to have survived, unless only a year in age intervened, in which case the man is presumed to survive the woman. After the age of 60, it is the younger without distinction of sex, who is presumed to have survived. Dr. Dufour of Marseilles reported a number of cases showing the inexactness and the weakness of these legal presumptions. He called attention to the fact that in foreign laws these articles as to presumption of survival have not been introduced.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 13, 1913.

Personal

Professor Oestreich, the former assistant of Virchow, has given a course of instruction in pathologic anatomy for dentists.

Professor Friedberger has been appointed as department head in the pharmacologic institute at Berlin.

Professor Abderhalden, contrary to expectation, has decided to decline the call to Vienna as the successor of Professor Ludwig.

June 6, Prof. Theodor Wayl, a well-known hygienist, died in Berlin, aged 63. In 1879-1880 he was docent in Erlangen and joined the faculty of the technical high school at Charlottenburg as docent for hygiene some years ago. Among his numerous literary publications, the most important is the large nine-volume "Handbook of Hygiene," of which a second edition will shortly appear. He has published a large number of articles on hygiene, especially studies on municipal hygiene.

American Physicians Visiting in Berlin

At the end of July a large number of American physicians will come to Berlin on their medical study trip through Europe. In consideration of the friendly hospitality which has been repeatedly accorded to German physicians in America, a hospitable reception will be provided by the Berlin medical profession for their American colleagues. For this purpose a reception committee, consisting of delegates from various associations, has been formed.

Friedmann's Case in the Berlin Medical Society

A short announcement on the program of the last session of the Berlin medical society (Berliner medizinische Gesellschaft) of a communication by Professor Westenhöfer, the head of the department of the pathologic institute of this place, with regard to the findings at the necropsy of a tuberculous patient treated with Friedmann's remedy, resulted in a quite unanimous demonstration against Friedmann. The necropsy findings which Professor Westenhöfer demonstrated constitute at least a warning to be cautious in the estimate of the Friedmann remedy. At the point of injection evident tuberculosis was found; the pathologic process in the young patient with strong predisposition, who according to the statement of his physician had been doing relatively well previous to the treatment by Friedmann, showed a very marked aggravation of the tuberculosis process to which he succumbed. Friedmann had given him assurance of complete recovery. The speaker censured Friedmann—and this censure was repeated by other speakers in the course of the evening—because Friedmann had not fulfilled his promise to lay before the society a scientific account of his method. He spoke very earnestly against Friedmann's methods in his foreign tour. Madame Professor Rabinowitsch has tried to penetrate the secret of the important and success-bringing culture of tubercle bacilli with which Friedmann claims to cure tuberculosis and in regard to which he maintains the strictest silence. Apparently it is connected, as has already been assumed, with a culture from cold-blooded animals, which, however, as previous researches have shown, is by no means harmless to warm-blooded animals.

The only defender of Friedmann was Professor Schleich, who had formerly assisted Friedmann and did not desert him in the present difficult situation. He stated that without doubt successful results had been achieved in Friedmann's patients. He further announced in Friedmann's name that the latter after his return would put his remedy at the disposal of physicians. Professor Max Wolff has examined cases treated by Friedmann and could not find any improvement. Prof. Fritz Meyer saw, in the beginning, occasionally rapid apparent improvement from the use of tubercle bacilli derived from cold-blooded animals which were said to be identical to those used by Friedmann, but this improvement ceased with extraordinary quickness. Privy Councilor Schwalbe, the editor of the *Deutsche medizinische Wochenschrift*, emphasized the opinion that a vote of lack of confidence was necessary at this place because the fact that Friedmann had described his remedy in the Berlin medical society was being used as an advertisement. The procedure of Friedmann should be most severely condemned by German physicians.

Transactions of the German Central Committee for the Tuberculosis Campaign

The general meeting of the committee in charge of the campaign against tuberculosis was held in May. I will give you a few interesting results of the transactions.

WELFARE WORK FOR THE TUBERCULOUS

From the report of the general secretary it appears that in the past fiscal year about $375,000 (1,500,000 marks) were expended for the establishment of sanatoriums and places for the care of tuberculous patients in Germany. At present there are 142 sanatoriums for adults in which 41,000 pulmonary patients were treated in the last year, with an average residence of only three months. There are 27 sanatoriums for tuberculous children. For those threatened with tuberculosis, and for scrofulous children, there are 103 institutions with a total of 2,400 beds. The children's sanatoriums were equipped with manual training departments as a matter of experiment.

Patients with bone and joint tuberculosis are received in 22 sanatoriums with 1,800 beds. For the selection of the patients there are 42 observation stations. There are 222 homes for consumptives in the advanced stages; further there are 23 convalescent homes which, however, can admit only a small number of tuberculous patients. There are now 1,500 dispensaries, the chief function of which is the care, at their homes, of the tuberculous, generally those in an advanced stage.

It is especially remarkable that in the year 1912 there again occurred a reduction in the tuberculosis mortality to 14.49 per ten thousand living, as compared with 15.12 in the year 1911.

INSTITUTIONAL CARE IN ADVANCED CASES

Dr. Ritter, physician-in-chief of the Hamburg sanatoriums for pulmonary diseases, called attention in an extensive address, to the importance of sanatoriums and hospitals in the care of consumptives. According to him the importance of institutional treatment and the isolation of those seriously sick in institutions is shown by the distinct reduction in tuberculosis mortality in England, where the patients are cared for less by sanatoriums for the mild cases than by hospitals for the patients seriously ill. Also in Hamburg the tuberculosis mortality was reduced to a very satisfactory degree, as shown incidentally, with a marked increase in the deaths from tuberculosis in hospitals, which rose from 40 to 56 per cent.

Dr. Stuertz of Cologne spoke on the same subject. He advocates the more frequent building of special tuberculosis hospitals. When the necessary funds are lacking the present hospital should, as soon as possible, be provided with arrangements for fresh-air treatment, and particularly the country hospitals should be employed for the reception of tuberculous patients, both mild and severe cases.

TUBERCULOUS MORBIDITY AMONG PHYSICIANS AND NURSES

Dr. Hamel, a member of the imperial public health office, reported on the tuberculous infection of physicians and the nursing staff in hospitals. His opinion is that the morbidity figures for pulmonary and laryngeal tuberculosis furnished by the physicians and nurses of the general hospital and the special hospitals for tuberculosis, including 2,650 physicians and 13,500 nurses, are not especially high. The annual morbidity figure of physicians in general hospitals was 0.29 per cent., and in the special institutions for tuberculosis, mostly public sanatoriums, 0.08 per cent.

The morbidity figure for the nursing-force in general hospitals was 0.6 per cent., and in the special institutions for tuberculosis 0.42 per cent. About half of the cases occurring in general hospitals, and about six-sevenths in special institutions for tuberculosis, were referred to a professional infection. The physicians and nurses attending tuberculous patients in the special wards for tuberculosis were attacked with a professional infection to a much greater degree than the medical and nursing staff in the other wards. In the general hospitals the attacks of tuberculosis of the attending physicians or of the nursing force was about four times as frequent as in the other departments. Compared with the internal medicine service, infection occurred nearly three times as often among physicians in the separate ward for consumptives, and twice as often in the nursing force.

With reference to professional infections the special ward for consumptives, compared with the other departments, showed among physicians eleven times as many cases; among the nursing staff nine times as many, and compared with the department for internal medicine, thirteen times as many among physicians and four times as many among nurses. In the general hospitals the attacks of tuberculous professional infections among assistant physicians were more than a third more frequent than among the medical practitioners, and seven times as frequent as among the attending physicians.

A relationship between the frequency of attacks of tuberculous infection of the physicians and the nursing force, and the more or less recent establishment of the institutions could be shown only to the extent that the relative frequency of attacks or infections of physicians or the nursing force in the institutions with older equipment was about twice as great as in institutions with modern equipment. The frequency of tuberculous diseases or infections could not be associated with the overwork of the nurses, as far as this is shown by the number of beds under the care of a single nurse.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, June 12, 1913.

Regulations Pertaining to Laboratories and Curative Institutes

When the old law dealing with sanitary and medical institutions was passed in 1870, there was little necessity for laboratories or special institutes for treatment apart from hospitals, as the doctor of that epoch was always able to make all the scientific examinations and give the treatment as known at that time in his own office. Since then, however, the number of chemical diagnostic means has increased to such a degree that no one doctor is able to master them all, not to speak of the time required for them. The bacteriologic, serologic, roentgenologic, physical-light, electrical and mechanical treatments have become so important that medicine cannot do without these aids. Therefore special diagnostic and therapeutic institutions have sprung into existence like mushrooms. In order to control such institutions and to safeguard the public, a series of regulations has been worked out, of which those [illegible] the profession have recently been again [illegible] of the doctors by the medical councils.

Three different kinds of institutions are marked out by the regulations:

1. Laboratories for microscopic examinations conducted on commercial lines. They must be conducted by duly qualified medical men who must prove their competency for this kind of work by special testimonials. These laboratories are not allowed to make any experiments with cultures and on animals, and they must not handle or conduct examinations when there is suspicion of pest, cholera, yellow fever, smallpox and blackwater fever. They have chiefly to make microscopic examinations for diagnostic purposes.

2. Laboratories for cultures and animal experiments. Such laboratories can also prepare and sell preparations and cultures of bacteria, they can conduct animal experiments for diagnostic purposes only, of which exact records must be kept. They can make vaccines, but they too must not deal with the five pathogenic bacteria mentioned.

3. Laboratories maintained or authorized by the state for scientific purposes. These are entitled to conduct all kinds of bacteriologic and animal experiments.

As a rule only the first-mentioned class of laboratories used to be permitted by the authorities, but the enormous increase of the medical requirements for an exact diagnosis at present necessitates animal experimentation or pure cultures. Therefore the second group of laboratories will have to be permitted in a much higher number, or the first group will have to receive the privileges of the second class too. In order to safeguard the public against abuse and danger, a strict control of such institutions will also be an imperative necessity. As regards the therapeutic institutions, it has become quite the custom here to conduct any especially complicated method of treatment in a special institute, not in the doctor's private office. Here it is important that the director be a duly qualified medical man and that the administrative part be strictly separated from the therapeutic part. The medical councils, in this respect, rule that public advertisements, except in medical periodicals, are not ethical. All the sanatoriums which advertise such procedures as can be done by the private practitioner in his office should not be patronized by the doctors, as they injure the general practitioner or the specialist. In any case, therapeutic procedures in sanatoriums not controlled by doctors should under no condition be allowed.

A Petition for Supplying Radium to the Hospitals

A few days ago the head of our gynecologic and dermatologic clinics waited on the ministers of education and the prime minister and handed over to them a memorandum in which they explained the necessity of supplying a sufficient quantity of radium and mesothorium to the hospitals. They pointed to the reports made at the Gynecologic Congress in Halle, at which most favorable results of the treatment of inoperable carcinoma and sarcoma of the female organs by actinic energy were published by competent men (Krönig and Doederlein). The ministers have promised to do whatever they are able to comply with the just wishes of the eminent scientists, among whom were Wertheim and Riehl.

It is interesting to note that a large quantity of radium is being found and made in Austria. For years it was exported nearly exclusively to the United States. Nearly all the radium manufactured in France also comes from Austria, since Madame Curie has the right to get all the pitchblende she requires from Joachimsthal, the Austrian mining-place. She has thus received 1.5 gm. (24 grains) of radium valued at about $215,000 (1 million kronen) from the Austrian government. This is the bulk of the radium used in France for medical purposes. In this country the substance could not be had for a long time. Only quite lately the radium station at the general hospital in Vienna received 0.5 gm. (7½ grains) of radium, but instead of using it only for scientific and curative purposes, the red-tape bureaucracy required that this radium, worth a quarter of a million, should bring in due interest at a rate of at least 5 per cent. It is being lent for money to the wards and to private practitioners, but only between the hours of 8 a. m. and 6 p. m. Thus thousands of hours of radio-activity have been and are being lost to science, during which time all the experiments could have been made, which other more fortunate men were able to conduct elsewhere. The conditions were also illustrated in the memorandum. Von Krönig, whose report at the congress was so interesting, worked with mesothorium, of which he had a large quantity. In a short time a large supply of this substance will be on the market and then perhaps a more general use will be possible.

Marriages

Arthur Aloysius Mulligan, M.D., Harrison, N. J., to Miss Catheryn Corinne McArtle of Jersey City, at Avon-by-the-Sea, N. J., June 18.

Albert M. Cook, M.D., New Castle, Pa., to Miss Gevien Rudesill, formerly of New Castle, at Los Angeles, June 11.

Augustus Philip Hauss, Sr., M.D., New Albany, Ind., to Miss Rosetta V. K. Couzens of Detroit, Mich., June 18.

Austin Bassett Thompson, M.D., Orange, N. J., to Miss Bessie Meacham Allsop of Williamstown, Mass., June 26.

William C. McLaughlin, M.D., Providence, R. I., to Miss Katherine R. Learson of Roslindale, Mass., June 11.

Wilbur C. Smith, M.D., Kansas City, Mo., to Miss Genevieve Taylor, in Topeka, Kan., Dec. 31, 1912.

Mott Parker Blair, M.D., Marshville, N. C., to Miss May Bloxom, at Fairview, Eastern Shore, Va., June 4.

George F. H. Bowers, M.D., Worcester, Mass., to Miss Irene Page of Newton Highlands, Mass., June 19.

James Davis Lewis, M.D., Scranton, Pa., to Miss Myrtle Brace Roberts of Clark's Summit, Pa., June 18.

Louis J. Linder, M.D., East St. Louis, Ill., to Miss Helen L. Bolt of Brighton, Ill., at Alton, Ill., June 11.

Jesse M. Spikes, M.D., Swarts, Ark., to Miss Alma Spikes of Pocahontas, Ark., at Attica, Ark., June 18.

Clifton Kersey Timmons, M.D., Chicago, to Miss Bernice Elizabeth Cota of Lagrange, Ill., June 24.

Samuel Burton McGarry, M.D., Searsboro, Iowa, to Miss Vivian Ahrens of Perry, Iowa, June 11.

Jacob Edwin Tuckerman, M.D., Cleveland, Ohio., to Miss Katherine Barton of Mercer, Pa., May 30.

Sebree S. McGinnis, M.D., Tribune, Kan., to Miss Abby Baker of Pueblo, Colo., June 24.

Robert Hardin, M.D., Tarry, Ark., to Miss Gertrude Green of Little Rock, Ark., June 12.

Edward Orville Sage, M.D., to Miss Bessie Baumeister, both of Louisville, June 18.

Bert Leslie Taylor Wood, M.D., to Miss Edna Swissler, both of Chicago, June 25.

John Homans, M.D., to Miss Alice F. Knapp, both of Boston, June 10.

Deaths

Frank Hartley, M.D. College of Physicians and Surgeons, New York City, 1880; formerly a member of the American Medical Association; a member of the New York Clinical Society, New York Academy of Medicine and American Urological Association; professor of clinical surgery in his alma mater; attending surgeon to the New York Babies' Hospital; consulting surgeon to the French, Italian, General Memorial, St. Joseph's, Paterson, Nyack and White Plains hospitals; died at his home in New York City, June 19, from nephritis, aged 57.

Hans Peter Jensen, M.D. Long Island College Hospital, Brooklyn, N.Y., 1873; a member of the Nebraska State Medical Association: a veteran of the Civil War; for forty-two years a practitioner of Omaha; at one time professor of materia medica in Creighton University; professor of electrotherapeutics in the medical department of the University of Nebraska; consulting physician to the Union Pacific System; died at his home in Omaha, June 10, aged 68.

Frank Tryon Meriwether, M.D. University of Louisville, Ky., 1886; a member of the American Medical Association, Mississippi Valley Medical Association and Southern Surgical and Gynecological Association; for eight years a member of the Medical Corps of the Army; one of the most prominent surgeons of North Carolina; died in a hospital in Asheville, June 12, three days after an operation for appendicitis, aged 48.

Ira Bourland Ladd, M.D. Cooper Medical College, San Francisco, 1896; of Stockton; a member of the Medical Society of the State of California; surgeon of U. S. Volunteers during the Spanish-American war, with two years' service in the Philippine Islands; chief surgeon of the Central Emergency Hospital, Stockton; died in the Morton Sanitarium, San Francisco, June 6, after the removal of a tuberculous kidney, aged 44.

Severin Lachapelle, M.D. University of Victoria College, Coburg, Ont., 1874; professor of general pathology and pediatrics in Lavall University, Montreal; formerly mayor of St. Henry; a member of the Dominion Parliament from 1892-1896; superintendent of the Montreal Crèche and one of the founders of *La Goutte de Lait;* died at his home in Montreal, June 18, from cerebral hemorrhage, aged 61.

Abel John Philip Baltzer, M.D. Bellevue Hospital Medical College, 1892; a member of the American Medical Association and president of the board of health of Hickman, Ky.; who had been suffering from malignant disease of the throat; died in his office, June 8, aged 43, from the effects of a gunshot wound of the head believed to have been self-inflicted with suicidal intent.

William Edwin McFarland, M.D. Beaumont Hospital Medical College, St. Louis, 1897; a member of the State Medical Society of Wisconsin; formerly a practitioner of Trempeleau; died at his home in Bismarck, Mo., June 7, from the effects of atropin, self-administered, it is believed with suicidal intent, aged 47.

William Die McPhee, M.D. Kansas Medical College, Topeka, 1898; of Anthony, Kan.; coroner of Harper County in 1904 and county health officer in 1905-1906; local surgeon of the Rock Island System; aged 42; while suffering from melancholia, hung himself at the home of his parents in Anthony, June 8.

William L. Manchester, M.D. Eclectic Medical Institute, Cincinnati, 1889; for many years a practitioner of Carthage, Mo.; while standing on the interurban car tracks in front of his home near Lexington, Ky., June 7, was struck by a train and died from his injuries in less than an hour, aged 70.

John Maurice Vaughan, M.D. Howard University, Washington, D. C., 1900; who had been in ill health from nervous disease for six months; died at his home in South Richmond, Va., June 15, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, aged 42.

John Robert Jenkins, M.D. Miami Medical College, Cincinnati, 1879; a member of the Indiana State Medical Association; a Confederate veteran; formerly a practitioner of Shelbyville and Hammond, Ind.; died at the home of his daughter in Evanston, Ill., June 15, from nephritis, aged 71.

Nathaniel Henry Alcock, M.D. University of Dublin, Ireland, 1896; a recognized authority on physiology; vice-dean of St Mary's Hospital Medical School, Dublin, and since 1911, professor of physiology in McGill University, Montreal; died at his home in that city, June 12, aged 42.

John Nutting Farrar, M.D. Jefferson Medical College, 1874; a dentist of New York City; formerly a member of the American Medical Association; one of the first to advocate the correction of irregularities of the teeth; died at his home in New York City, June 13, aged 73.

Alexander P. Hamilton, M.D. Jefferson Medical College, 1866; for many years a resident of Fredonia, Kan., and Carthage, Mo.; for twelve years professor of mathematics in a college in Lexington, Ky.; died at the home of his son, near Carthage, June 13, aged 78.

John T. Stephenson, M.D. Missouri Medical College, St. Louis, 1882; a member of the Missouri State Medical Association; died at his home in Tina, June 7, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, aged 55.

James C. Jordan, M.D. Drake University, Des Moines, Ia., 1908; a member of the American Medical Association; of Des Moines; one of the most promising young surgeons of Iowa; died at the home of his parents in De Soto, Ia., June 10, from pneumonia, aged 30.

Albert Henry Phelps, M.D. University of Vermont, Burlington, 1884; for four years a member of the medical staff of the Santa Fe system; a member of the Legion of Honor of France; died at his home in Glens Falls, N. Y., June 14, from heart disease, aged 50.

Daniel Joseph Scully, M.D. College of Physicians and Surgeons, New York City, 1899; a member of the American Medical Association and a specialist in tuberculosis, of Colorado Springs; died at his home June 16, from bronchopneumonia, aged 37.

Helen Kidd McIlvaine, M.D. Northwestern University Woman's Medical School, Chicago, 1895; a member of the Indiana State Medical Association; of Huntington, Ind.; died in Denver, Colo., June 14, from pneumonia, five days after a surgical operation.

Warren Clark Eustis, M.D. Bellevue Hospital Medical College, 1877; a member of the Minesota State Medical Association; of Owatonna, Minn.; died in the Mound Park Sanitarium, St. Paul, Minn., May 28, from nervous breakdown, aged 66.

Eugene Lee Crutchfield, M.D. University of Maryland, Baltimore, 1887; a member of the staff of St. Joseph's Hospital, Baltimore, and a member of the Johns Hopkins Glee Club; died in his room in Baltimore, June 12, from pneumonia, aged 50.

James Nelson Martin, M.D. University of Michigan, Ann Arbor, 1883; for many years until 1901 Bates professor of diseases of women and children in his alma mater and later a resident of Los Angeles; died in San Diego, June 11, aged 61.

Llewellyn Claude Manchester, M.D. Rush Medical College, 1889; a member of the American Medical Association; for eight years a member of the Pittsburgh Eye and Ear Hospital; died at his home in Pittsburgh, June 13, aged 50.

Don C. La Verne, M.D. University of Tennessee, Nashville, 1907; of Senatobia, Miss.; a member of the American Medical Association; died in the Gartley and Ramsey Hospital, Memphis, Tenn., June 6, from uremia, aged 29.

Charles Wesley Mills, M.D. College of Physicians and Surgeons, San Francisco, 1899; a member of the American Medical Association; of Arcata, Cal.; was instantly killed in an automobile accident near Arcata, June 10.

Guy O. Brinkley, M.D. College of Physicians and Surgeons, Baltimore, 1902; a member of the Medical Association of Georgia; aged 40; was shot and killed by a patient in his office in Savannah, June 16.

George William Johnson, Jr., M.D. Medical College of the State of South Carolina, Charleston, 1911, and later an intern in Roper Hospital; died at his home in Charleston, June 12, from typhoid fever, aged 26.

John Earley, M.D. Northwestern Medical College, St. Joseph, Mo., 1884; a veteran of the Civil War and a practitioner of Worth County for forty-five years; died at his home in Grant City, June 16, aged 73.

Edward F. Becker, M.D. Jefferson Medical College, 1871; for many years grand medical examiner of the Sons of Hermann; a Confederate veteran; died at his home in Brenham, Tex., June 9, aged 74.

Richard Fletcher Van Heusen, M.D. Albany (N. Y.) Medical College, 1895; a member of the Medical Society of the State of New York; died at his home in New York City, June 16, from nephritis, aged 46.

Maud Marion Walter, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1898; one of the proprietors of the Walter Sanatorium, Reading, Pa.; died in that institution, June 14, aged 39.

Hillary Wingo Williams M.D. University of Texas, Galveston, 1913; died at the Municipal Hospital, Philadelphia; where he was an intern, June 17, from scarlet fever, aged 25.

George B. Sellards, M.D. Detroit College of Medicine, 1907; a member of the American Medical Association; died at his home in Deerfield, Mich., June 13, from heart disease, aged 37.

Thomas H. Cooper (license, Tennessee, 1889); a Confederate veteran; for more than forty years a practitioner of Putnam County; died at his home in Brotherton, June 13, aged 70.

Maurice Pritchard, M.D. Detroit Medical College, 1887; a member of the board of health of Virginia City for several years; died at his home in Reno, Nev., June 12.

Ephraim O. Thomas (license, Indiana); a practitioner of Marion, Ind., for twenty-five years; died in the East Haven State Hospital, Richmond, June 13, aged 67.

Charles Caldwell Lewis, M.D. Vanderbilt University, Nashville, Tenn., 1881; died at his home in Alamo, Tenn., May 17, from cerebral hemorrhage, aged 62.

McLean Caverly, M.D. Trinity Medical College, Toronto, Ont., 1890; formerly of Belleville; died at his home in Trenton, Ont., June 8, aged 55.

Benjamin Franklin Shipley, M.D. University of Maryland, Baltimore, 1883; died at his home in Alpha, Md., June 16, aged 64.

F. R. Smalling (license, Ark., 1903); a practitioner for forty-two years; died at his home in Wrightsville, June 6, aged 63.

George Henry DeNike, M.D. Queens University, Kingston, Ont., 1882; died suddenly in his sanatorium in Clinton, N. Y., June 13, from heart disease, aged about 57.

Harry Edgar Snow, M.D. Rush Medical College, 1887; died at his home in Belmar, N. J., June 12, from erysipelas, aged 55.

William Thomas Shelton, M.D. Louisville Medical College, 1872; died at his home in Umatilla, Fla., March 30, aged 76.

Nicholas S. Snyder, M.D. Louisville Medical College, 1874; died at his home in Hot Springs, Ark., June 5, aged 68.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE DUKET CONSUMPTION "CURE"

A Letter from Bennett Medical College and Comments Thereon

To the Editor.—In an editorial in the May 24 issue of THE JOURNAL, page 1646, entitled "The Duket 'Consumption Cure,'" you ask the question: "What can have led the Bennett Medical College to lend recognition to a humbug so palpable?" I think this question should be answered, and therefore I am sending this letter with the hope that you may see fit to publish it in THE JOURNAL so that others that read your article may have our answer.

In the first place, the only scientific journal that has spoken of this remedy, the investigation of which is now being conducted by some of the members of our faculty, as a "cure" has been your organ. The evidence submitted to the faculty of our college by the Hon. William Lorimer was of such a nature as to lead us to assist him in organizing a scientific laboratory in charge of scientific men. Briefly it was this: Senator Lorimer stated that nineteen tuberculosis patients had been treated by this alleged remedy and that fourteen of them had been so benefited that they had been able to return to their usual occupations, one improved and four died. When these cases were investigated by us, we found that his statements were true, but, of course, did not know whether tuberculosis had been properly diagnosed in them or not. The object of this investigation is for the purpose of determining the merits or demerits of these claims, and not one of our laboratory board has either announced nor as yet endorsed this alleged remedy as a "cure." One and all we have stated frankly that we are getting in a position of scientifically determining whether or not it has any merit. It is not being "foisted as a cure."

It, as far as the St. Rita's Laboratory is concerned, is a problem which we are still at work on. Every scientific man knows that the answer cannot be given until sufficient time has elapsed so that the patients that are treated may, by their condition, prove or disprove Dr. Duket's claims that he has a remedy which is valuable in the treatment of tuberculosis. Your journal has devoted space to writing up the man. The St. Rita's Laboratory is devoting its energies in scientifically determining the merits of the alleged remedy. If THE JOURNAL of the American Medical Association desires to criticize our scientific methods in the conducting of this investigation, that will be your privilege; but to raise the question, as you have, about our motives or judgment in trying to prove or disprove the merits of any remedy, no difference by whom brought out, is absolutely unfair. The St. Rita's Laboratory Board is not investigating Dr. Duket. His remedy, however, is on trial. Its composition is no secret to us, and Dr. Duket has nothing to do with its preparation. It is prepared by the custodian of our board, and if our investigation proves it is of any value, it will be given to the medical world. On the other hand, if it is found to be useless in the treatment of tuberculosis, that fact will also be given to the profession.

This laboratory board has not sought publicity, but on account of the prominence of Mr. Lorimer some publicity has been unavoidable, but in every case no statement other than that written above has been given out by any one connected with us. The daily press has from time to time published excerpts from THE JOURNAL of the American Medical Association containing attacks on Dr. Duket. For this publicity we certainly cannot be held responsible. You may criticize us if you please for trying out a remedy. You may criticize Senator Lorimer for spending a large amount of money for this investigation, but I desire to assure you that we and he have no other object in this matter than to help find something of benefit for the tuberculous patient. Let me assure you that we are not "exploiting a cure." During the last ten weeks over one hundred patients have been treated with this remedy at the Grace Hospital, Chicago, and if you desire to gain first-hand knowledge, the door is open to you. Any investigation that will not stand scientific scrutiny from any scientific source is unworthy and when several hundred tuberculous patients have been treated at Grace Hospital during next year and when a record of each one of these cases has been written, and when the records have been given one by one to the profession, then your opinion and my opinion as to the merits or demerits of this remedy will be unnecessary, for the records of the cases will tell the story.

As you well know, all medical progress has not been made by the well-known scientists, and "ages long have told and will yet tell the triumphs wrought unending by men and things once held as naught." THE JOURNAL should be helping us prove or disprove the value of this alleged cure and thereby either completely eliminate it or establish its efficacy. The waters should not be muddied by attacks while we are just beginning the investigation. The proof of the pudding is the eating thereof. Why not wait for the proof?

Let there not be that "refinement of cruelty" which says to the tuberculous patient: "There is no hope other than fresh air, fresh eggs and fresh milk for your malady," but let us add to these efficient agencies a strong hope that some day some one will find a remedy, and that the one way to prove the virtues of any remedy is to try and keep trying. Let us as medical men work out this great problem scientifically, carefully and conscientiously and do unto others as we would have others do unto us, and not condemn without investigation any remedy, or unheard, any medical man.

JOHN DILL ROBERTSON, President.

P. S.: If you desire to publish this article in THE JOURNAL I respectfully request that the entire article be published, and if this cannot be done that no abstract of it be published.

J. D. R.

[COMMENT: If this answer is the best that can be given to THE JOURNAL'S question: "What can have led the Bennett Medical College to lend recognition to a humbug so palpable as the Duket cure?" we believe most of THE JOURNAL'S readers will agree that it is a lame one. Dr. Robertson says that Bennett Medical College took up the "investigation" of Duket's preparation on Mr. Lorimer's assertion that nineteen patients with—alleged—tuberculosis had received the "treatment," that fourteen of these patients had been so benefited that they were able to return to work, that one had "improved" and that four had died. On Dr. Robertson's own admission, Bennett Medical College did not know whether or not any of these nineteen patients ever had tuberculosis. On such flimsy evidence—plus the persuasiveness of Mr. Lorimer's money—the college threw its influence behind this "cure" and gave it a standing it otherwise never could have had. Doubtless this action has resulted in giving the college an amount of publicity that may or may not have been desired; we venture to assert, however, that the advertising is not such as will enhance its standing in the scientific world.

It took neither a long time nor any great expenditure of energy for The Journal to find that first, Duket had no professional standing; second, he had little or no scientific training; third, even those patients who had been heralded in the Duket booklet as "cured cases" were, in many instances, dead; fourth, a number of other patients, whose cases had not been advertised but who had been "treated," also were dead. With an expenditure of a tithe of the money that Mr. Lorimer must have spent, Bennett Medical College could have proved without the possibility of a doubt the absolute and unqualified worthlessness of the Duket remedy. If it had done this quietly, unostentatiously, with no publicity that would have awakened false hopes in the minds of thousands of unfortunate sufferers from tuberculosis, the college would have done a work, which, while lending itself less to advertising purposes, would have been of distinct service to humanity.

The statement that The Journal "has devoted space to writing up the man," is false. The fact is that The Journal has carefully avoided any discussion of Duket as a man although it has in its possession plenty of material on this subject. Whatever has been said about Duket has had reference to his professional status, a point that is not only germane to the subject but indissolubly wrapped up in it.

The assertion that the "laboratory board" has not "sought publicity" would be funny if the matter were not so serious. Newspapers have heralded this new "cure" and Chicago papers in particular have printed alleged interviews with Mr. Lorimer, Dr. Duket, Father Green and others. Pictures of Duket himself, in various poses, both in and out of the laboratory, have also appeared in Chicago papers. Letters have been sent by Mr. Lorimer to the governors of states urging that representatives be sent to watch the "cure." In fact, the publicity, which we are told was "not sought," would have cost a king's ransom had it appeared as paid advertising matter.

Dr. Robertson says that The Journal should help Bennett Medical College "prove or disprove the value of this alleged cure." The Journal has done so. It has presented evidence that makes plain not only the worthlessness of the "alleged cure" but also the fraudulence of its methods of exploitation —and the evidence is so overwhelming that no intelligent layman, much less a scientifically trained physician, could fail to accept it.

There is no "refinement of cruelty" in telling the consumptive that fresh air, good food and skilful care will cure him. But it is damnable cruelty to send broadcast over the country statements that will lead, and have led, hundreds if not thousands of these unfortunate sufferers *to believe that* a worthless and *fraudulently* exploited remedy holds for them the hope of life. And when a supposedly reputable medical college aids and abets this cruel illusion, it is time that the medical profession protested, not for its own good name but in the interest of a cruelly deluded public.—Ed.]

THE HYER-BALDWIN TREATMENT

Mr. Hyer Denies that Duket Uses His Preparation

To the Editor: I noticed in The Journal of May 18, 1913, which was largely copied in the daily press, what purported to be the report of a committee regarding the treatment of one Dr. Duket for tuberculosis. In that report the statement is made that Dr. Duket is supposed to be using a remedy known as the Hyer-Baldwin treatment, which they say is supposed to consist of salicylic acid and the carbonate of guaiacol, all of which they say has been extensively advertised.

I respectfully request you to correct this statement, first because there never was a treatment known as the Hyer-Baldwin treatment, and secondly because my treatment has always been known, and is known to-day, as the Hyer or Oxi-Salata treatment. I wish to further say that it has never been extensively advertised, as your report states.

Dr. Baldwin did procure this medicine from me at different times in the past, but I discontinued furnishing it to him some four or five years ago. I find that it is the belief of many physicians and a large proportion of the people in general that the Duket treatment consists of the Oxi-Salata treatment, but this is absolutely false. Therefore I respectfully ask you to make this correction in The Journal.

G. J. Hyer, Chicago.

[Comment: The only comment necessary on this letter is that we have in our files evidence to show (1) that there was a "treatment" known as the "Hyer-Baldwin treatment" and (2) that it was widely exploited as the "Hyer-Baldwin treatment." Whether or not Duket is using the "Hyer-Baldwin treatment," we do not know, and we so stated. We do know, however, that the method of exploiting, the method of administering and the claims made for the Duket "cure" bear a striking resemblance to those made for the Hyer-Baldwin product.—Ed.]

Correspondence

The Effects of High-Frequency Currents

To the Editor:—In The Journal (May 31, 1913, p. 1707) appears an editorial "The Effects of High-Frequency Currents." I am in hearty accord with the sentiments expressed in the body of the editorial. Electrotherapy, like any other therapeutic measure, can be reduced to science and logic. Any measure that can not be so reduced is not entitled to the term "therapy." Electrotherapy is understood by few, misunderstood by many, and underestimated by everybody.

In the twenty-third line of the editorial referred to, we read, "For example, it has lately been stated that a few 'treatments' with currents of from one to three amperes sufficed to increase the weight of an individual 14 kilograms."

The original article by Durig and Grau was very loosely written. In fact, nearly all writers on matters medical seem to share this fault. There are to my mind three reasons for such laxity. First, the writer assumes that his readers are as familiar with the theme as he himself is; secondly, the writer has not a perfectly clear view of the subject with the result that his writing teems with ambiguity; thirdly, there are always those who desire everybody else to know that they are thoroughly familiar with their subject, but they take good care, while their words are many, to impart as little real knowledge as possible. Such unwarranted ambiguity naturally misleads the reader, as the very next line of the editorial proves: "One might assume, on the face of such information . . ." As a matter of fact, what the original article by Durig and Grau should have stated was something like this: "A patient suffering from copremia, with a consequent loss of weight, was subjected to the diathermic method of the high-frequency current, with the result that from one to three amperes traversed the body. This amount of electrical energy was transformed into heat units within the tissues. As a result of these extra heat units without muscular exercise or the enervating influence of heat applied externally, oxidation was increased and the end-products were eliminated from the system. The individual cells of the body thereby became hungry, the appetite reestablished and absorption and above all assimilation took place. The result was as regards the food for which there was either no desire, or which, if taken, was not made use of, that 'after a few treatments, etc.,' the entire process was reversed and the patient gained in body-weight. This was not due to the mere application of the high-frequency current, but it was the result of increased metabolism." The assumption therefore based on the article was erroneous, consequently all of the deductions fallacious.

The editorial continues: "On the other hand, it has been maintained that special modes of applications of high-frequency currents may induce a loss of two pounds in a single treatment of half an hour's duration. This is equivalent to a loss of 9,000 calories in the form of fat. Such are some of the extreme claims on record."

There is certainly nothing mysterious or incomprehensible about that phenomenon. But why waste time in figuring out the equivalent in fat calories? When a writer makes such statements as to loss in body-weight, he should make it clear that the loss is due to the profuse perspiration which this current induces.

When the high-frequency current is passed through the hindquarters of a guinea-pig, in the short space of three minutes, the temperature in the rectum registers 103 F. With this sudden rise in body-temperature, there is increased circulation due to the loss of capillary resistance. The human being not only sweats profusely, but the kidney function being increased, he has an immediate desire to void his urine. There is no good reason why, in a selected case, the sweat plus the urine should not amount to two pounds after thirty minutes' treatment. The same editorial states that "high-frequency currents of 1.9 amperes at 180 volts were transmitted to the body." These figures are entirely devoid of any meaning. According to Ohm's law, if the current strength in amperes was 1.9 and the E. M. F. in volts 180, the resistance in ohms must have been 94.7. I am not familiar with any part of the unbroken human skin where the resistance is as low as that.

Not only are all high-frequency currents the result of induction, but this induction implies a comparatively high voltage, at least into the thousands. In fact, the voltage in all high-frequency currents is so high that no instrument exists that can properly speaking measure them; they can only be approximated.

After the editorial admits a distinct rise in body-temperature, with capillary dilatation, increased heart action and profuse perspiration, it continues: "These phenomena are in no strict sense peculiar manifestations of the use of electricity. They are the result of heat." This is partly true; they are the result of heat. Yet it will be well to bear in mind this one important fact: The high-frequency current is the only agent known to mankind at the present time that is capable of causing an increase of physiologic heat in the internal parts that is greater on the inside than on the outside of the body. In all other temperature raising devices, the heat on the outside is always greater than the heat produced on the inside of the body. Since we have no other similar agent we can afford to be charitable and credit to the high-frequency current all that it is entitled to.

Albert C. Geyser, M.D., New York.

The Leadership of Victor C. Vaughan

To the Editor:—At the February meeting of the Council on Medical Education, Dr. Victor C. Vaughan, the newly elected President of the American Medical Association, expressed the only dissenting conviction as regards the unfair deal being rendered the larger organization of society by the prevalent inadequate teaching of preventive medicine. His work in the study of the biochemistry of metabolism and his effort to make application of this knowledge to the needs of the individual patient as a means of arresting the pathologic physiology leading to the development of gross manifestations of disease, and his stand on the question of eugenics, together with his firm adherence to the doctrine of evolution, render him preeminently fitted for leadership in the life-saving business. For these reasons, I am proud to take my place behind him as a loyal soldier.

If every department of organized medicine will do as well as Prof. Victor C. Vaughan has done in his department of work, the medical profession will deserve honor and respect, and the larger organization of society will receive a fair deal.

When the general practitioners of America get busy applying the principles of modern science for the correction of the incipient disorders of metabolism, then will they correct the pathologic physiology which conduces to the development of gross pathology, as well as cure the condition known as "infectiousness," which lowers the natural bodily defenses and invites bacteriologic invasion, and we shall truly be engaged in "a life-saving and happiness-making business." The surgeons are brilliant fellows, but nine-tenths of their work is due to the neglect by physicians of the employment of such measures as will correct the disease-process ten years before there is a necessity for the knife. At any rate, please put me on record as being willing to take my stand in the ranks as a private, to fight for the welfare of the common people, as all will do who follow the leadership of Victor C. Vaughan.

Henry S. Munro, M.D., Omaha.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TRANSPLANTATION OF ORGANS

To the Editor:—1. Has the transplantation of organs, particularly the kidneys, passed the purely experimental stage?

2. If so, who has performed the operation, for what pathologic condition and with what success?

3. Also please give me references in the literature for articles concerning the operation.

H. B. Marvin, M.D., Lima, N. Y.

Answer.—1. The transplantation of organs by vascular anastomosis is still in the experimental stage.

Mantelli, C.: Transplantation of the Kidney, *Gaz. d. osp.*, May 6, 1913.
Haberer, H. V.: End-Results of Transplantation of Pedunculated Suprarenals, *Arch f klin. Chir.*, xciv, No. 3, 1911.

2. Mantelli reviews the published cases and finds that they have been uniformly unsuccessful so far as the functional activity of the kidney is concerned. The author made two series of experiments, but in both of them the kidney rapidly atrophied or underwent necrosis, although he was able to secure a satisfactory anastomosis. He concludes, as the result of his experiments, that the homoplastic transplantation of the kidneys of new-born animals is not followed by good results; consequently, it may be said that the transplantation of kidneys can be logically applied to human surgery only with great difficulty. From his experiments it is evident that the difficulty is not in securing a satisfactory anastomosis, for he employed a technic that had been successful in a considerable experience with vascular anastomosis, both in experimental work and in surgical operations. The results have confirmed those obtained by other experimenters.

3. The following references may be consulted:

Carrel, A.: Results of the Transplantation of Blood-Vessels, Organs and Limbs, The Journal, Nov. 14, 1908, p. 1663.
Carrel: Résultats de l'arrêt temporaire de la circulation des veines rénales, *Compt. rend. Soc. de Biol.*, Paris, March, 1909, p. 527.
Carrel: The Culture of the Tissues in Vitro, *Jour. Exper. Med.*, August, 1911, p. 209.
Borst and Enderlen: Ueber Transplantation von Gefässen und ganzen Organen, *Deutsch. Ztschr. f. Chir.*, June, 1909, xcix, 54.
Unger, E.: Advantages of Vein or Artery Wall for Plastic Operation on the Dura, *Berl. klin. Wchnschr.*, April, 1910.
Villard and Tavernier: Un cas de transplantation expérimentale du rein, *Presse méd.*, June, 1910, xviii, 489
Perrin: Thèse de Lyon, July, 1911.

RINGER'S SOLUTION IN TOXICODERMA OF PREGNANCY

To the Editor:—In the toxicoderma of pregnancy cured by Ringer's solution (The Journal, March 8, 1913, p. 793), it is not clear in what manner the injection was given—whether vaginal, rectal, subcutaneous or intravenous.

T P. Lyman, M.D., Chicago.

Answer.—Ringer's solution was injected into the buttocks by means of a syringe holding 100 c.c. Intramuscular infusion was found less convenient and reliable than the intramuscular injection.

SANITATION OF RAILWAY CARS

To the Editor:—Please give references to information regarding the sanitation of railroad or Pullman cars.

J. S. MCEWAN, M.D., Orlando, Fla.

ANSWER.—The following may be referred to:

Hume, A. M.: Something about Railroad Sanitation, *Railway Surg. Jour.*, December, 1910.

Wertenbaker, C. P.: Railway Sanitation, New York *Med. Jour.*, Sept. 23, 1911.

Hume, A. M.: What is Railway Sanitation and How Can It Be Obtained? abstr. in Society Proceedings, THE JOURNAL, March 16, 1912, p. 812.

Report of Committee on Hygiene and Sanitation, *Railway Surg. Jour.*, April, 1912.

Ventilation of Sleeping Cars, *Public Health Jour.*, July, 1912.

Crowder, Thomas R., Denny, J. A., and Schroyer, C. A.: Report of Committee on Ventilation of Cars, published by American Medical Association, 1911.

LIST OF MEMBERS OF THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY

To the Editor:—Physicians with patients abroad who wish to furnish them with lists of American men practicing in Europe, who have been gathered under the head of the Continental Anglo-American Medical Society, will receive this list if they will send their request, enclosing a stamped and addressed envelope, to

WALTER B. SWIFT, M.D., 110 Bay State Road, Boston.

DUTY ON MICROSCOPES

To the Editor:—I understand that the United State Senate Committee in its recommendation on the new tariff have advised raising the duty on microscopes, etc, from 30 per cent. to 45 per cent. I need not call your attention to the fact that this duty will be chiefly paid by the better class and at the same time the poorest off financially (because at the outset of their lifework) of the medical profession. Is it fair?

HENRY C. THACHER, M.D., New York.

MEDICAL ETHICS

To the Editor:—In "Queries and Minor Notes" (THE JOURNAL, June 21, 1913, p. 1976), P. W. L. asks for material for an address on Medical Ethics. In the citations I do not observe "Ethics of the Medical Profession" by Daniel Lichty, M.D., Rockford, Ill., read before the Winnebago County Medical Society, Tuesday, Dec. 10, 1912, and appearing in *Medical Progress*, Louisville, Ky., June, 1902.

DANIEL LICHTY, M.D., Rockford, Ill.

MARRIAGE OF EPILEPTICS

To the Editor:—Please allow me to ask if any of your readers know of any case or cases in which two persons, both being subject to epileptic seizures, have married and if any or all of the issue of such marriage have also been subject to epileptic seizures or any of them exempt therefrom.

W. CONYERS HERRING, M.D.
435 West One-Hundred-and-Nineteenth Street, New York.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

A RECOVERY BY A PHYSICIAN AS A BAR TO MALPRACTICE

A recent inquiry calls attention to an important medicolegal problem which might develop during the professional career of any physician.

In the case in hand a western physician had sued a patient to recover compensation for services rendered, and had obtained a judgment therefor. Subsequently the patient brought his action against the physician, alleging malpractice. The question arising is whether or not the judgment obtained by the physician would bar by way of estoppel the suit brought by the patient.

An examination of the cases and writers on the subject discloses a conflict of authorities, the minority holding that the action would be barred under all circumstances, while the majority maintains that the judgment would act in bar only in cases in which the question of malpractice had been either directly or indirectly adjudicated by the court having prior jurisdiction.

Clearly should a defense of malpractice be interposed by the patient in the suit instigated by the physician, judgment for the plaintiff would bar any subsequent action, based on the alleged negligence brought by the defendant in the contract action,[1] provided that the physician brought his suit in a court of proper jurisdiction.

Again, supposing that the patient appeared and defended, but did not plead malpractice. Under these circumstances, the majority would apparently hold the judgment for the physician to constitute a bar to the subsequent action for malpractice, because this question was indirectly adjudicated in the first court of proper jurisdiction.[2]

The minority asserts[3] that a judgment so rendered is not necessarily decisive of the question of malpractice, as this is not in issue unless introduced in evidence, and no court can decide a point that is not actually before them for a ruling.

Finally, supposing the patient failed to appear and defend, and that the judgment entered for the plaintiff was on an *ex parte* hearing, that is by default. Here the majority holds that the judgment for the physician would constitute no bar to the subsequent action brought by the patient for malpractice, for in order to obtain a judgment it was simply necessary to show that the services rendered were of value and that the sum demanded as compensation was under the circumstances reasonable. The physician did not have to show that he had not been negligent, as it was necessary for him to set forth in his declaration and prove only such facts as are essential to a contract action. Again, these actions by physicians are usually brought in courts of limited jurisdiction. It would consequently be inequitable to hold a man barred from an opportunity to recover damages for a *bona-fide* injury simply because of the limitations of the forum, which had not even passed on the question of malpractice.[4]

The minority, on the other hand, advances the perhaps logical but nevertheless highly technical argument that the defendant has had his day in court, and that the question of malpractice has been adjudicated. It is asserted that inasmuch as the services must be proved to be of value, that conclusion being reached, it is obviously impossible to maintain the opposite. Hence a thing which is of value cannot be harmful, and therefore any possibility of negligence or malpractice must of necessity be negatived. Thus in passing on the value of the services the court also rules as to negligence, and such a judgment would bar by estoppel a subsequent action for malpractice.[5]

SUMMARY

1. A recovery by a physician is a bar to an action for malpractice when that defense was interposed in the suit instituted by the physician.

2. It is asserted that a recovery by a physician is likewise a bar even though malpractice be not interposed but some other defense set up; there is strong argument, however, to the contrary.

3. A recovery by a physician does not constitute a bar to an action for malpractice when the judgment was by default, a minority to the contrary notwithstanding.

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[1] Howell v. Goodrich, 69 Ill. 556; Goble v. Dillon, 86 Ind. 327, 44 Am. Rep. 308; Jordahl v. Berry, 72 Minn. 119, 71 Am. St. Rep. 469; Sykes v. Bonner, 1 Cinc. Sup. Ct. 464; Sale v. Eichberg, 105 Tenn. 333; Lawson v. Conaway, 37 W. Va. 159, 38 Am. St. Rep. 17; Ressequie v. Byers, 52 Wis. 650, 38 Am. Rep. 775.

[2] Jordahl v. Berry, 72 Minn. 119, 45 L. R. A. 541 and note; Sale v. Eichberg, 105 Tenn. 333; Lawson v. Conaway, 37 W. Va., 159; Bellinger v. Craigin, 31 Barb. (N. Y.) 534; *Gates v. Preston*, 41 N. Y. 143; Blair v. Bartlett, 75 N. Y. 150, 31 Am. Rep. 455; Schopen v. Baldwin, 83 Hun (N. Y.) 234; see also Schwinger v. Raymond, 83 N. Y. 97, 38 Am. Rep. 415.

[3] Goble v. Dillon, 86 Ind. 327; Ressequie v. Byers, 52 Wis. 650; Sykes v. Bonner, 1 Cinc. Sup. Ct. 464.

[4] Goble v. Dillon, 86 Ind. 327, 44 Am. Rep. 358; Jordahl v. Berry, 72 Minn. 119, 71 Am. St. Rep. 469; Sykes v. Bonner, 1 Cinc. Supt. Ct. 464; Lawson v. Conaway, 37 W. Va. 159, 38 Am. St. Rep. 17; Howell v. Goodrich, 69 Ill. 556; Ressequie v. Byers, 52 Wis. 650, 38 Am. Rep. 775.

[5] Bellinger v. Craigin, 31 Barb. (N. Y.) 534; Gates v. Preston, 41 N. Y. 143; Blair v. Bartlett, 75 N. Y. 150, 31 Am. Rep. 455; Schopin v. Baldwin, 83 Hun (N. Y.) 234; see also Schwinger v. Raymond, 83 N. Y. 97; 38 Am. Rep. 415.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Capitol, Montgomery, July 8. Sec., Dr. W. H. Sanders, Montgomery.

CONNECTICUT: Regular, City Hall, New Haven, July 8-9. Sec., Dr. Charles A. Tuttle, 196 York Street; Homeopathic, Grace Hospital, New Haven, July 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Avenue; Eclectic, New Haven, July 8. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DISTRICT OF COLUMBIA: Washington, July 8 Sec., Dr. George C. Ober, 125 B St., S. E.

INDIANA: State House, Indianapolis, July 8-11. Sec., Dr. W. T. Gott, 120 State House.

MAINE: State House, Augusta, July 15-16. Sec., Dr. Frank W Searle, 776 Congress St., Portland.

MASSACHUSETTS: State House, Boston, July 8-10. Sec., Dr. Walter P. Bowers, Room 159, State House.

MONTANA: Senate Chamber, Capitol Bldg., Helena, July 8. (First special examination held aside from regular semi-annual examinations.) Sec., Dr. William C. Riddell, Helena.

NEW HAMPSHIRE: Concord, July 8-9. Regent, Mr. H. C. Morrison, State Library.

NEW MEXICO: Santa Fe, July 14. Sec., Dr W. E. Kaser, East Las Vegas.

OKLAHOMA: Guthrie, July 8-10. Sec., Dr. John W. Duke, Guthrie.

RHODE ISLAND: State House, Providence, July 10 Sec., Dr. Gardner T. Swarts, State House.

SOUTH DAKOTA: Capitol Bldg., Pierre, July 8. Sec., Dr. L. G. Hill, Watertown.

UTAH: Salt Lake City, July 7-8. Sec., Dr. G. F. Harding, 310 Templeton Building.

VERMONT: Burlington, July 8-11. Sec., Dr. W. Scott Nay, Underhill

WEST VIRGINIA: Charleston, July 14-16. Sec., Dr. H. A. Barbee, Point Pleasant.

Utah January and April Reports

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examinations held at Salt Lake City, January 8 and April 8, 1913. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75. At the examination held in January, the total number of candidates examined was 8 of whom 6 passed and 2 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Hahnemann Med. College and Hospital, Chicago	(1905)	75
Rush Medical College	(1912)	80.8, 84.4
College of Physicians and Surgeons, Baltimore	(1912)	85
Creighton Medical College	(1912)	80.6
Queen's University, Kingston, Ontario	(1907)	75

FAILED

College	Year Grad.	Per Cent.
Northwest. University Med. School, (1894) 68.2;	(1912)	73.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Marion Sims College of Medicine, St. Louis	(1898)	Missouri
Washington University, St. Louis	(1908)	Missouri

At the examination held in April, the total number of candidates examined was 6 all of whom passed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1894)	76.1
Rush Medical College	(1912)	83.2
University of Louisville	(1903)	78.9
Coll. of Physicians and Surgeons, Baltimore	(1912)	83.8
Washington University, St. Louis	(1912)	86.9
St. Louis University	(1913)	80.3

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1911)	Illinois
University Medical College, Kansas City	(1897)	Illinois

Massachusetts March Report

Dr. Walter P. Bowers, secretary of the Board of Registration in Medicine, reports the written, oral and practical examination held at Boston, March 11-13, 1913. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 57 of whom 32 passed; including 5 nongraduates and 2 osteopaths, and 25 failed, including 14 nongraduates and 4 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1908)	83
State University of Iowa, College of Medicine	(1913)	83
Medical School of Maine, (1890) 75; (1904) 75;	(1912)	79.1
College of Physicians and Surgeons, Baltimore	(1912)	75
Boston University	(1912)	75
Harvard Medical School, (1882) 75; (1900) 90; (1911) 77.2; (1912) 81.6, 84.1.		
Tufts College Medical School, (1909) 79.2; (1910) 76.2; (1912) 75, 75.7, 76.6.		
College of Physicians and Surgeons, Boston	(1912)	78.2
University of Michigan, Dept. of Med. and Surg.,	(1908)	77.5
Western Reserve University	(1909)	75.9
Hahnemann Medical College of Philadelphia	(1910)	83.1
University of Pennsylvania	(1894)	90
Jefferson Medical College	(1911)	80.7
Medical College of Virginia	(1912)	75
Laval University, Quebec	(1912)	76.1
Nongraduates, 75.9, 78.7, 79, 79.5, 81.2.		

FAILED

College	Year Grad.	Per Cent.
Atlanta School of Medicine	(1912)	70.1
Medical School of Maine	(1891)	63.5
Maryland Medical College (1912) 71.4;	(1913)	64.5
College of Physicians and Surgeons, Boston	(1910)	67
Tufts College Medical School	(1912)	72.5
University of Vermont	(1891)	63.7
Nongraduates, 48.2, 57.5, 59.2, 60.5, 61.4, 62.9, 63.5, 63.9, 65.9, 67.3, 71, 72.5, 72.6, 72.7.		

New Mexico April Report

Dr. W. E. Kaser, secretary of the New Mexico Board of Health and Medical Examiners, reports that at the meeting held at Santa Fe, April 14-15, 1913, eleven candidates were licensed on presentation of satisfactory credentials, and one was licensed through reciprocity. The following colleges were represented:

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year Grad.	Total No. Examined
Kentucky School of Medicine	(1908)	1
University of Illinois	(1910)	1
State University of Iowa, Coll. of Med.	(1909)	1
St. Louis University (1908)	(1912)	2
Washington University	(1904)	1
University of Buffalo (1892)	(1909)	2
Ohio Medical University	(1897)	1
Jefferson Medical College	(1889)	1
Vanderbilt University	(1908)	1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Memphis Hospital Medical College	(1910)	Oklahoma

Arkansas Eclectic May Report

Dr. C. E. Laws, secretary of the Arkansas Eclectic Medical Board reports the written examination held at Little Rock, May 13-14, 1913. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 20 of whom 18 passed and 2 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Drake University	(1891)	81.2
Eclectic Medical University, Kansas City, (1904) 80; (1911) 80.7; (1913) 76.5, 79.2, 79.7, 80.2, 80.7, 84, 86, 88.		
Eclectic Medical College, Cincinnati, (1890) 81; (1910) 80.5; (1913) 80.2, 85.2, 85.2, 86, 87.2.		

FAILED

College	Year Grad.	Per Cent.
Eclectic Medical University, Kansas City	(1913)	54.3, 66.8

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Georgia College of Eclectic Medicine and Surgery,	1912)	Georgia
Eclectic Medical University, Kansas City	(1900)	Oklahoma
American Medical College, St. Louis	(1908)	Oklahoma
Eclectic Medical University, Cincinnati	(1905)	Oklahoma

Book Notices

Experimental Physiology. By E. A. Schäfer, F.R.S., Professor of Physiology, Edinburgh. Cloth. Price, $1.35 net. Pp. 111, with 83 illustrations. New York: Longmans, Greene & Co., 1912.

The methods described in this book of laboratory directions are well calculated to give the best results with the greatest ease of preparation and manipulation. Many of the devices are original. The various pieces of special apparatus are so simple of construction that they can be made in the laboratory shop. The following are particularly interesting mechanisms: 1. Flat steel spring marked at intervals with number of vibrations corresponding to certain length of spring for studying the genesis of tetanus. 2. Simple sulphuric acid and mercury capillary electrometer. 3. Kidney plethysmograph with piston recorder. 4. Spirometer which records on a drum with valves to measure volume of respirations. 5. Drum contact arranged in primary circuit in muscle-curve experiments. 6. Frog heart plethysmograph with record of volume changes on drum. 7. Arrangement of mercury manometer with three-way cock connecting washout reservoir bottle with manometer and arterial cannula, and with the pressure maintained in the reservoir bottle by a bicycle pump. The levers, electrodes and other apparatus are simple and effective. The illustrations are clear and sufficiently numerous to make the work easy and intelligible to the student. The experiments are those usually given to the most advanced type of medical and other scientific students; but by a selection of the simpler experiments, laboratory work can be well arranged for more elementary students.

The Care and Treatment of European Children in the Tropics. By G. Montagu Harston, M.D., M.R.C.S., L.R.C.P., Ophthalmic Surgeon to the Tung Wa Hospital, Hong-Kong, with an Introduction by Sir Patrick Manson, G.C.M.G., M.D., LL.D. Cloth. Price, $3 net. Pp. 232, with 45 illustrations. New York: William Wood & Co., *1913.*

This little book is of great interest to all physicians and intelligent laymen, but of absorbing interest to the pediatrician. The author is a keen observer and a scientific clinician who has had an enormous experience in tropical medicine. From this experience he has written the book in a manner that is clear, comprehensive and fascinating, and always from the comparative point of view of the reader who lives in a temperate zone. The northern physician will be interested in the chapters on kala-azar, oriental sore, Malta and dengue fever, Blackwater fever, frambesia, sunstroke, relapsing fever, etc. Of still greater interest will he find the chapters on the effects of heat, sun, humidity, tropical diet and tropical environment on the physical and mental development, the comparative morbidity and mortality, and the incidence of nutritional, infectious and other diseases of infants and young children that live in the tropics. The book is attractively bound and printed and the illustrations are excellent. This is to be commended warmly as a contribution to tropical medicine, but still more so as a valuable contribution to our American and European pediatric literature.

The Treatment of Disease in Children. By G. A. Sutherland, M.D., F.R.C.P., Physician to Paddington Green Children's Hospital. Cloth. Price, $3.75. Pp. 403. New York: Oxford University Press, 1913.

This book is distinctly an English text-book on therapeutics of children. It reflects in every way the teachings of the great British clinicians, Thompson, Still and others, and adds nothing new.

Food Inspection and Analysis. For the Use of Public Analysts, Health Officers, Sanitary Chemists and Food Economists. By Albert E. Leach, S.B. Revised and Enlarged by Andrew L. Winton, Ph.D., Chief of the Chicago Food and Drug Inspection, Bureau of Chemistry, U. S. Department of Agriculture. Third Edition. Cloth. Price, $7.50. Pp. 1001, with 159 illustrations. New York: John Wiley & Sons, *1913.*

There were many treatises on food analysis, both in this country and abroad, previous to the publication of the first edition of this work in 1904, but since that date Leach's work has been one of the leading authorities on the subject. The general plan of the latest edition remains the same as in preceding ones, but considerable antiquated matter has been replaced by new. Physicians and toxicologists should be interested in the sections devoted to the determination of arsenic, caffein, cocain, saponins and such food preservatives as benzoates, borates, formates and salicylates. It is probable that the work will continue for some time to remain the most comprehensive work on food analysis in the English language.

Surgery: Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery, Jefferson Medical College, Philadelphia. Volume 6. Cloth. Price, $7 net. Pp. 1177 with 519 illustrations. Philadelphia: W. B. Saunders Company, 1913.

The appearance of a sixth volume to this work shows that the editor is alert to the needs of the situation. Much of the matter in text-books on surgery becomes old almost as soon as it is off the press; hence it was a happy thought of the editor to supplement the other volumes with a sixth, thus bringing many subjects up to date and adding much new matter that has developed since the work was completed. A complete index adds much to the value of the work.

Medicolegal

Validity of Arrangements between County and City for Care of Small-pox Patients

(Mayor and Council of City of Macon vs. Bibb County (Ga.), 75 S. E. R. 435)

The Supreme Court of Georgia holds that by virtue of Sections 1633, 1646, 1670 of the Civil Code of Georgia of 1910 municipalities and counties are empowered to establish hospitals and pesthouses for persons afflicted with small-pox, the house established by the municipality being for the care and detention of those within the city limits, and the county pesthouse being for the care of those who reside in the county, but outside of the municipality. Where a municipality, instead of maintaining its own pesthouse, combines with the county for the treatment of its patients at the county's pesthouse, on the basis that the expense is to be apportioned between the municipality and the county according to the number of patients from the city and the county, the city will not be absolved from its obligation to pay its share of the expense, on the ground that the county's pesthouse is maintained by revenue derived from taxes laid on residents of the entire county.

Where a county, by written proposal, offers to receive, care for, and treat, at the county pesthouse, persons afflicted with small-pox, who are residents of the city, on the basis that all expenses connected with the operation of the county pesthouse shall be apportioned between the city and county according to the number of inmates coming from the city and county, and the city shall pay its share monthly, and that the arrangement is to be terminable on thirty days' notice by either party, which proposition is accepted by the city, and where the city in subsequent years, during the pendency of the arrangement, sends small-pox patients to the county pesthouse, which patients are cared for according to the terms named in the county's proposal, the city will not be relieved from the payment of its proportionate expense, on the ground that the arrangement of the city and county to combine the pesthouses is void, because, as contended, its effect is to create a debt extending beyond the current year, and to bind the successors in office of the city.

Causes of Insanity and Insanity as a Defense to Crime

(Litchfield vs. State (Okla.), 126 Pac. R. 707)

The Criminal Court of Appeals of Oklahoma says that insanity is one of the most mysterious diseases to which human beings are subject. It has its origin from a thousand different causes. Sometimes it results from intense religious excitement. At other times it grows out of sickness or a personal injury. It may be hereditary, and often cannot be explained. The records show that grief, sorrow or shame resulting from the disruption of domestic relations or loss of virtue by a female relative constitute a most prolific source of insanity. Voluntary intoxication is neither a defense nor a mitigation for the commission of crime, but an act by one who is suffering from delirium tremens which is a result of intoxication is not punishable by law. Why? Because delirium tremens is involuntary, and is recognized by all authorities as a species of insanity. If a man kills another as a matter of revenge or anger on account of some insult or injury done to a female relative, such killing will not be justifiable or excusable, but will be either murder or manslaughter, according to the circumstances under which it is committed. But, if a man kills another while insane, the killing is excusable, although the insanity may have been the result of grief, shame or shock caused by an insult or injury to a female relative of the party doing the killing. In other words, it matters not what the cause of the insanity may be. If such insanity exists, it is a complete defense to the commission of crime. The issue of insanity when applicable to the evidence should be submitted to the jury, and they alone should be the judges as to the good faith of this defense. Every defense is liable to be abused, but this is no reason why any legal defense should not be submitted to a jury.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

June, CXLV, No. 6, pp. 781-936

1 *Clinical Observations Concerning Twenty-Seven Cases of Splenectomy. H. Z. Giffin, Rochester, Minn.

2 *Administration of Ox Bile in Treatment of Hyperacidity and of Gastric and Duodenal Ulcer. F. W. Palfrey, Boston.

3 Intestinal Bacteria in Pellagra. W. J. MacNeal, New York.

4 Rational Treatment of Tetanus, with Report of Twenty-Three Cases. A. P. C. Ashhurst and R. L. John, Philadelphia.

5 Cancerous Changes in Benign Tumors of Skin. R. L. Sutton, Kansas City, Mo.

6 *Use of Antityphoid Vaccine During Epidemic of Typhoid. C. J. Hunt, Harrisburg, Pa.

7 Cases of Actinomycosis. F. E. McKenty, Montreal.

8 *Hema-Uro-Chrome: New Laboratory Test for Cancer and Sarcoma. T. G. Davis, Los Angeles.

9 Psychosis Following Carbon Monoxid Poisoning, with Complete Recovery. M. O'Malley, Washington, D. C.

10 Acute Polymyositis. H. Fox, Philadelphia.

11 *Clinical Importance of Reflex Phenomena in Intrathoracic Diseases, Nervous Mechanism and Diagnostic Limitations of Regional Muscle Changes in Pulmonary Tuberculosis. J. L. Pomeroy, Monrovia, Cal.

1. See abstract No. 89 in THE JOURNAL, April 19, 1913, p. 1262.

2. **Ox Bile in Treatment of Hyperacidity.**—Palfrey believes that there is reason to suspect that in hyperacidity and in gastric and duodenal ulcer the symptoms are at least in part due to delay in the neutralization of the acid contents discharged into the duodenum. The administration of ox-bile pills (salol coated) by the mouth should theoretically correct this fault. Empirically such administration of ox-bile has seemed to be of service in the relief of pyrosis and pain after eating; it has been followed by improvement in cases of gastric and of duodenal ulcer.

The treatment was as follows: A general diet list was given merely to avoid clearly unsuitable foods; this was regarded by the experienced patients as a generous one. A caution against overeating was given, and stress was laid on thorough mastication to insure prompt action on the food by the gastric juice. The ox bile was given in pills prepared according to the directions of Pfaff, each containing 0.25 gram of dried and pulverized ox bile, salol coated to conceal the taste and to prevent dissolution in the stomach. Two or three of these pills were given after meals three times a day for a week, after which, as a rule, the number was reduced. In some instances where the appetite was not good, or where there was other reason to suspect that the gastric secretion was not always active, dilute hydrochloric acid and tincture of nux vomica, of each 8 minims, were given in water before meals, and for temporary relief sodium bicarbonate and milk of magnesia were recommended to the few patients not already familiar with them. Aside from these measures, and laxatives when needed for constipation, the daily life of the ambulatory patients continued as before, and in the less numerous cases in bed on account of hematemseis or other severe symptoms as little other treatment was given as possible. The results of this treatment were such as to lead the author to the belief that they could not be explained by the general directions given, but must be laid to the influence of the bile. In practically all cases followed the patients described a satisfactory improvement beginning within a few days, and at the end of a week or ten days gave a highly favorable report of their condition.

6. **Antityphoid Vaccine.**—The conclusions drawn by Hunt from the studies made in one epidemic indicate the little value antityphoid vaccine has in limiting the number of cases and in modifying the process in the individual case. It would seem since antityphoid serum confers relatively a more immediate and fairly strong immunity that a serum would be of some advantage during such an epidemic. The use of vaccine should be limited to those not already infected; that is, to prevent secondary cases. To this end the individual history and diagnosis by culture would determine its use.

8. **Hema-Uro-Chrome.**—The bile acids and coloring were obtained by Davis in a concentrated form by the following original method. To 100 c.c. urine in a flask of about 150 c.c. capacity add 10 c.c. hydrochloric acid; heat over a slow fire until ebullition begins. Remove from the fire and when cool add 30 c.c. ether. Agitate occasionally by turning the flask, avoiding hard shaking, which interferes with removal of the ether. After about twelve hours remove the ether into a clean white dish; allow it to evaporate spontaneously, when the bile acids and coloring matter will be left on the bottom of the dish. The bile acids may be converted into salts by the addition of a small amount of a 1 per cent. solution of sodium acid-carbonate (bicarbonate) in water and the several tests applied. Davis recommends Torquay's test, which is a recently prepared solution of methyl violet, 1 to 2,000 of water (Practically one drop of the saturated alcoholic solution in an ounce of water.) Two tubes of equal size are partly filled with this solution; to one is added a small amount of the above solution of bile, which discharges the blue tint leaving the red. Comparison of the tubes renders the color change very distinct. Indican if present will be seen on the white dish as a ring above the bile acids and coloring. After chloroform or ether anesthesia acicular crystals of ammonium chlorid will be deposited and in some pathologic conditions cystin and fatty substances found.

During the use of this method Davis would occasionally find the ether pink, even red in color and on evaporation a more or less heavy deposit of hematin would be seen above the indican and constituents of bile. Observations extending over more than four years lead him to think that this pink coloration may occur to a slight degree in diseased conditions of the liver when the hepatic cells are unable to convert the product of the lysis of erythrocytes into bile acids and coloring substances; therefore it occurs in cholemia from any cause and in jaundice, especially the hematogenous form. It will be found when the urine contains red blood-cells from any cause, whether acute nephritis or hemorrhage, from some portion of the urinary tract. These may be differentiated by the microscope and removed before further testing. The pink tint appears due to a cleavage product of hemoglobin, probably hematin, and is present in larger amounts in the several infectious fevers, malaria in all its forms, greater in the severe types, as in the "tick-fevers" of Central America and Mexico, in babesia, piroplasmosis, etc. Hematin will be present in the urine of the anemias associated with tapeworm, uncinariasis or hookworm, and other intestinal parasites. It will be present in greater amount in the anemias due to disease of the blood-making organs, and in the essential anemias due to near malignant disease of the lymph-nodes and ductless glands, especially in hyperthyroidism and in splenic, myelogenous and pernicious anemia, the hematin being in proportion to the destruction of erythrocytes. While the tint and depth of color will vary with the proportions of bile, indican, hematin and urochrome present, by far the greatest amount and intensity of color obtained by the process described was found in the urine of patients suffering from malignant disease, cancer and sarcoma. Davis has never found it absent in cases of cancer or sarcoma even when of small size or unsuspected.

11. **Reflex Phenomena in Intrathoracic Diseases.**—The various reflex phenomena occurring in pulmonary tuberculosis and muscle spasm and degeneration over the chest and neck Pomeroy regards as part of a complex which results mainly from a segmental disturbance through the thoracic sympathetic ganglia to the cord; but also irritation of the phrenics, the vagus, the brachial plexus and the intercostals as well, unquestionably are factors in the presentation of the clinical picture. A localized neuritis from the tubercle toxin is also a possibility, while an actual diffusion of toxin in the area over the inflamed lung can only be surmised. There seems to be some definite relation between the diseased lung area and the muscle changes as well as the sensory electric reaction and trophic phenomena; the rigidity indicates activity of a recent nature, while regional degeneration indicates chronicity or destructive changes. Apparently no explanation seems more justifiable than that of a segmental disturbance after Head's generalizations.

Archives of Internal Medicine, Chicago

June, XI, No. 6, pp. 565-684

12 *Histopathology of Nervous System in Pellagra. H. D. Singer and L. J. Pollock, Kankakee, Ill.
13 *Blood-Pressure Variations as Influenced by Rapid Changes in Altitude. Study of 100 Normal Men. F. E. Clough, Lead, S. D.
14 *Superpermeability in Nephritis. W. A. Baetjer, Baltimore.
15 *Acute Unilateral Nephritis, with Report of Case. D. Riesman and G. P. Müller, Philadelphia.
16 *Effect of Uranium Nephritis on Excretion of Creatinin, Uric Acid and Chlorids, and Effect of Creatinin Injections During Uranium Nephritis. W. M. Kraus, New York.
17 *Case of Auricular Fibrillation with Post-Mortem Examination. A. E. Cohn and J. D. Heard, Pittsburgh.
18 *Relation of Heart-Block to Lesions of Auriculoventricular Bundle, with Report of Case. H. E. B. Pardee, New York.
19 *Classification of Nephritis. H. Oertel, New York.
20 *Etiology and Treatment of Hemoglobinuric Fever. C. Lovelace, Waco, Texas.

12. **Nervous System in Pellagra.**—The authors state that there is present in the acute attack of pellagra and in the interval cases a picture compounded of acute and chronic types of reaction. The acute changes include direct and indirect chromatolysis of nerve cells, satellitosis, astrocytosis and the presence of ameboid glia cells. Under this heading would also come a very moderate amount of perivascular infiltration which indicates general intoxication. The perivascular infiltration of the acute attack is not more marked than that found in the interval cases. This might be used as a further argument against an acute local infection of the nervous system during the acute outbreak of the disease. The chronic changes include fatty and fibrinoid degenerations, chronic Nissl changes of the nerve cells, increase of glia fibers, regressive changes of the glia cells, permanent destruction of nerve fibers and a marked increase of amyloid bodies. Chronic vascular changes were found only in cases of chronic alcoholism and senility.

In addition to these changes, especial emphasis should be laid on the constant presence in all cases examined where death had ensued during or soon after an acute attack of pellagra, of the reaction known as central neuritis. Furthermore, this type of change was found to have almost entirely disappeared in two patients dying eighteen months after an attack, while still definitely present, though in a mild degree, in a third patient dying three and one-half months after such an attack. It would therefore appear that the acute attack of pellagra is often, if not always, accompanied by some general intoxication of special kind which disappears in some, if not all, cases in which recovery occurs. It must not be forgotten, however, that a similar reaction is found in diseases other than pellagra.

13. **Blood-Pressure Variations Influenced by Rapid Changes in Altitude.**—Clough found that the rapid change in altitude, either up or down, was responsible for a fall in blood-pressure of approximately 5 mm. Lower readings were obtained from the decade from 30 to 40 than from 20 to 30. It was impossible to forecast by a man's build or any other factor what influence the ride would have on his blood-pressure. It was demonstrated that after a day's work 1,700 feet below the surface the average blood-pressure was about the same as on the surface before starting to work. It was demonstrated that abnormally high blood-pressure was not a contra-indication to hard work under ground. Admitting that the standing position is responsible for an increase of from 4 to 8 mm., these readings show that there is little difference between sea level readings (Thayer's) and those taken a mile above the sea. As factors influencing some of these higher readings, there must be taken into account the facts that the readings were taken in the standing position, that the men were, for the most part, heavy users of tobacco, tea and coffee, and moderate users of alcoholic beverages. Only one or two men seemed to be nervous at the time of the examinations.

14. **Superpermeability in Nephritis.** — Baetjer emphasizes some of the features which have been most striking in his study of cases:

> 1. That there exist cases of well-marked nephritis with evidence of impairment of renal function in which certain tests reveal an eliminative power normal or even above normal. 2. That these cases may be more common than we have hitherto supposed, judging from an experience of four such examples in several months. 3. That the evidence from these suggests that there may exist in some types of nephritis a stage in which the kidney is hyperpermeable, at least to some substances used for functional tests, with an elective impermeability for chlorids as suggested by Widal. 4. That it is necessary to study renal function from the standpoint of a considerable series of functional tests rather than to draw conclusions from the excretion of any one drug.

15. **Acute Unilateral Nephritis.**—A woman, aged 22 years, was seized with sudden pain in the left loin, radiating forward into the left hypochondrium; rigidity of lumbar muscles with tenderness in costovertebral angle; fever, rapid pulse; leukocytosis; in urine albumin, hyaline and granular casts, red blood-cells and pus-cells. Patient moderately septic; nephrectomy; kidney the seat of disseminated, suppurative nephritis. Patient made a good recovery although some weeks later it was necessary to remove the submaxillary gland for calculous inflammation.

16. **Effect of Uranium Nephritis on Excretion of Creatinin.**—Kraus summarizes his paper as follows:

> 1. In acute uranium nitrate nephritis, (1) creatinin is excreted in decreased amounts, and (2) uric acid is excreted in increased amounts. 2. In subacute uranium nitrate nephritis, (1) creatinin is excreted in decreased amounts (two weeks), but (2) uric acid and (3) chlorids are excreted in increased amounts (two weeks). 3. Creatinin injected in normal dogs is excreted "in toto." 4. Creatinin injected in acute uranium nephritis causes (1) endogenous and (2) injected creatinin, (3) uric acid, (4) chlorids and (5) water, to be excreted in decreased amounts; (6) death may ensue. 5. Creatinin injected in subacute uranium nephritis is excreted "in toto," and apparently does not affect the excretion of endogenous creatinin, uric acid, chlorids or water since these are unchanged.

17. **Auricular Fibrillation.**—A case is described by Cohn and Heard, in which, while the patient was under observation, a sequential rhythm changed to complete irregularity of the cardiac mechanism, due to auricular fibrillation. It is extremely doubtful whether the one-half dram of digitalis which the patient received could have been responsible for the altered rhythm, even if she had been given the drug before admission to the hospital, five days before. Neither can the fall in ventricular rate from 120 to 80, occurring with the onset of fibrillation, be ascribed to an administration of digi-

talis extending over only half a day. The fall in rate occurring with the onset of auricular fibrillation is difficult to explain, *but it occurs in other conditions* of which we have only slight knowledge. The action of strophanthin administered intravenously was studied and *showed a strikingly beneficial* effect on the circulation and the subjective symptoms of the patient. The post-mortem examination showed a lesion of the sino-auricular node, but it cannot be definitely asserted that a relation exists between the lesion described and the clinical irregularity that was studied.

18. Heart-Block and Lesions of Auriculoventricular Bundle.—A patient with aortic and mitral insufficiency and normal heart action developed complete heart-block and died. *Autopsy showed a streptococcus endocarditis superposed on* a chronic process of the aortic valve which had involved the substance of the heart. *The auriculoventricular bundle had* been destroyed for one-half of its transverse section by the chronic process, but this, so far as known, had never produced heart-block. Complete heart-block was produced by an involvement of the auriculoventricular system throughout its whole extent in an acute inflammation. The extent of the lesion of the bundle in the cases which have been previously reported is contrasted with the degree of heart-block which was present at death. It is concluded by Pardee that the extent of the anatomical changes is not the only factor which induces heart-block. Bacterial and metabolic toxins and deficient local blood-supply are suggested as accessory factors which, in certain circumstances, might act alone.

19. Classification of Nephritis.—*It is Oertel's belief* that with growing knowledge and necessarily growing differences of opinion in regard to the exact place of diseases, classification by groups will become the best means to serve the more general needs of the physician without interfering with the necessary freedom of thought and opinion of the scientific investigator. He accordingly draws the following sketches: 1. The group of simple nephritis, in which occurs cloudy swelling and parenchymatous degeneration, inflammatory edema and serous exudate, associated at times by desquamation and inflammatory proliferation of parenchyma cells. Restitution to integrity. 2. The group of degenerative and exudate nephritis, destructive in character; represented by marked and extensive degeneration and necrosis of parenchyma cells, cellular exudate, occasionally, with hemorrhages into glomeruli, periglomerular and intertubular tissue and into tubules. Proliferation of parenchyma cells in glomeruli and tubules, *abundant cast formation*. The predominating feature may exist either on the degenerative or exudative side. 3. *The group of degenerative and productive nephritis*, destructive and constructive in character; with prominent degenerative, largely fatty changes, much slighter and frequently more localized exudative processes, proliferation of parenchyma cells with the formation of epithelial giant cells, cast formation, appearance of leukocytoid and fibroblastic cells, loss and collapse of glomeruli and tubules, gradual formation of mature fibrous tissue overgrowing wasted and wasting parts, first patchy, then more diffuse. Occasional hemorrhages. Thickening of renal arteries, occasional formation of infarcts. 4. The group of productive nephritis, associated with a marked reconstruction of kidney cells and architecture. (a) Diffuse: With less violent but general degeneration and loss of parenchyma and glomeruli by inflammatory obliteration. Marked regeneration of flat and syncytial-like tubular epithelium with marked distortion of the tubules, and associated abundant irregular overgrowth of connective tissue. Arteriosclerosis of kidney arteries usually prominent; infarct formation occasional. (b) Focal and patchy: Characterized early by a hyaline swelling and fatty degeneration of intima and endothelial cells of the small renal vessels and capillaries, associated with cellular interstitial and periglomerular cell foci and focal parenchymatous degeneration. All of these acquire gradually more momentum, but the involvement of the small vessels remains most conspicuous. It leads to obliteration of their lumen, thereby adding quantitative to the qualitative disturbance. Thus results collapse of affected parts, the extent of which necessarily varies, so that at times the superficial appearance of the kidney may be only very finely granular. The extent of new connective tissue formation is also correspondingly irregular, usually most pronounced around Bowman's capsule. The tubules are relatively well preserved until late in the disease, and epithelial desquamation is insignificant. *The disease is usually accompanied by* arteriosclerosis of the kidney arteries.

20. Etiology and Treatment of Hemoglobinuric Fever.—A study of 514 cases convinces Lovelace that there exists a deplorable confusion as to the cause and treatment of blackwater fever. So far as may be indicated by this series of 514 cases, malarial infection stands in a direct causal relation to blackwater fever. Blackwater fever is not due to a particular species of malarial parasite. Quinin, in large or small doses, was, in this series, an invariable antecedent of the hemoglobinuric condition.

Under no circumstances, says Lovelace, should quinin be given to a blackwater fever patient during the period of *hemoglobinuria, nor for several days thereafter.* The effect of the paroxysm of hemoglobinuria is, itself, that of a drastic, but temporary, therapeutic agent, decimating the malarial parasites in the patient's blood much as a single intravenous injection of salvarsan decimates the spirochetes of syphilis in the lesions of that disease. Quinin, cautiously begun, will be necessary, but it should not be begun until several days after the urine has become free from hemoglobin. Measures which sustain the blood-pressure are urgently indicated during the period of hemoglobinuria. Of these, normal saline solution given by bowel, subcutaneously, or intravenously, is chief. Digitalis and caffein are of decided value. The prophylaxis of malaria is the prophylaxis of blackwater fever.

Biochemical Bulletin, New York

January, II, No. 6, pp. 211-332

21 Differential Chemical Study of Glucoses from Case of Pancreatic Diabetes. F. Landolph, Buenos Aires.
22 Detection of Aceto-Acetic Acid by Sodium Nitroprussid and Ammonia. V. J. Harding and R. F. Ruttan, Montreal.
23 *Ortho-Toluidin as Indicator for Occult Blood.* R. F. Ruttan and R H. M Hardisty, Montreal.
24 Synthetic Properties of Emulsin. V. K. Krieble, Montreal.
25 Nicotinic Acid in Rice Bran. U. Suzuki and S. Matsunaga, Tokyo.
26 Study of Influence of Cancer Extracts on Growth of Lupin Seedlings. J. Rosenbloom, New York.
27 Biochemistry of Female Genitalia. T. A. Erpf-Lefkovics and J. Rosenbloom, New York
28 Idem. J. Rosenbloom, New York.
29 Department of Biochemical Research at Vineland, N. J. A. W. Peters, Vineland, N. J.
30 Biochemistry in New York Twenty Years Ago. E. E. Smith, New York.
31 Immunity in Some of Its Biochemical Aspects. C. F. Bolduan, New York.
32 Plan for Organization of American Biological Society. A. P. Mathews, Chicago.

Boston Medical and Surgical Journal

June 12, CLXVIII, No. 24, pp. 865-900

33 Psychology and Physiologic Sciences. R. MacDougall, New York.
34 Digestivity of Human Gastric Juice Compared to Digestivity of Various Remedies Recommended in Disorders of Stomach. G. H. Nofer, Philadelphia.
35 So-Called Binasal Hemianopsia in Brain Tumor. W. B. Lancaster, Boston.
36 Diagnostic Evidence Obtained by Roentgenoscopy from Lateral Aspect of Skull with Special Reference to Base and Its Adnexa. P. Brown, Boston.
37 Social Pediatrics. I. S. Wile, New York.

June 19, CLXVIII, No. 25, pp. 901-940

38 *Diabetes Insipidus and Polyurias of Hypophyseal Origin. H. Cushing, Boston.
39 Diagnosis and Treatment of Diphtheria. J. B. Greene, Asheville, N. C.
40 *Seventeen Patients with Pulmonary Tuberculosis Treated by Artificial Pneumothorax. H. L. Barnes, Wallum Lake, and F. T. Fulton, Providence, R. I.
41 Method of Supervision in Medicine. W. T. Carolin, Lowell. Mass.
42 Tuberculosis of Epididymis: Its Effect on Testicle and Prostate. J. D. Barney, Boston.
43 Case of "Syphilitic Periostitis" Cured by Salicylates. E. H. Goodman, Philadelphia.

38. Diabetes Insipidus and Polyurias of Hypophyseal Origin.—Cushing summarizes his experimental data on this subject as follows:

> 1. The infundibular lobe contains, in addition to the substance capable of glycogenolysis, a chemical body or hormon capable of eliciting diuresis. 2. Under certain operative conditions which entail posterior lobe manipulations there often occurs a diuretic response, and occasionally an extreme polyuria, whereas a temporary diminution in the excreted urine is apt to follow other operative procedures, requiring an equally long anesthetization. 3. Posterior lobe implants may cause a temporary polyuria, which subsides on the removal of the implanted tissue. 4. Stimulaion of the autonomic system of nerves to the gland elicits diuresis. 5. Certain operative procedures, such as separation of the infundibular stalk, and occasionally a simple posterior lobe excision, may call forth a somewhat prolonged polyuria. Certain clinical observations, coupled with the experimental data which have been assembled, suggest not only that,

The emotional polyurias are in all likelihood the expression of a neurogenic discharge of hypophyseal secretion, but also that, the clinical polyurias of longer duration are in many instances merely the symptomatic expression of an internal secretory disturbance brought about by injury or disease involving the hypophyseal neighborhood. Hence, whether or not there actually proves to be a form of polyuria of primary renal origin, our present conceptions of so-called diabetes insipidus need to be recast, with especial reference to the factor of the secretory activity of the pituitary body and particularly of its posterior lobe.

40. Artificial Pneumothorax in Pulmonary Tuberculosis.—The conclusions the authors draw from their investigation are as follows:

> In genital tuberculosis the epididymis is the primary focus in the vast majority. Tuberculosis of the epididymis becomes bilateral in 41.6 per cent. of all cases and becomes so within six months of the time of involvement of the first side in 30 per cent. The prostate and vesicles are found to be infected in 75 per cent., this infection occurring in the first six months in 30 per cent. and in the first year in 54 per cent. It is also shown that this infection takes place quite as often in the presence of unilateral, as of bilateral epididymitis. The urine is pathological in 43 per cent. of all cases; bladder irritability is found in 35 per cent. and in about half of these it occurs in the first six months. In 33 per cent tuberculosis, past or present, of organs other than those of the genito-urinary tract, is to be expected. The lungs are most often attacked. Clinical observation shows tuberculosis of the testicle in 44 per cent., but the pathologist finds the disease in 66 per cent., and of these 53 per cent. are found infected within six months of the onset of the epididymitis. The records of sixty-seven epididymectomies show that no case has yet returned for orchitectomy. The radical operation is, therefore, rarely necessary Infection of the first and second epididymis, as well as of prostate and vesicles, seems to be by the blood or lymphatic streams, but it cannot be denied that in some, infection takes place through the vas by an ascending or descending process. The operative mortality of 147 cases is 2.72 per cent.. a general miliary tuberculosis being the most common cause of death. As it has been shown that the infection may become wide-spread in the first six months of the disease operation at the earliest possible date is strongly indicated.

California State Journal of Medicine, San Francisco

June, XI, No. 6, pp. 211-252

44 Effects of Athletics on Young People. H. D. Power, San Francisco.
45 Thoracic Esophagectomy: Report of Case. J. H. Barbat, San Francisco.
46 Suggestions for Mental Hygiene. G. V. Hamilton, Santa Barbara.
47 Present Status of Prostatic Surgery. C. D. Lockwood, Pasadena.
48 Lingual Tonsil and Some of Its Diseases. W. H. Dudley, Los Angeles.
49 Absence of Brain Tumor Symptoms in Cases of Tumors of Brain. W. F. Beerman, San Francisco.
50 Hypersensitiveness to Homatropin. D. W. Montgomery, San Francisco.
51 Raynaud's Disease: Report of Case. L. S. Mace. San Francisco.
52 Sublimate Poisoning: Case Report. F. F. Gundrum, Sacramento.
53 Case of Angioneurotic Edema Cured by Injections of Horse Serum. F. Williams, San Francisco.

Journal of Biological Chemistry, Baltimore

June, XIV, No. 5, pp. 433-570

54 Blood Relationship of Animals as Displayed in Composition of Serum Proteins. J. H. Woolsey, San Francisco.
55 *Theory of Diabetes: Sarcolactic Acid in Diabetic Muscle R. T. Woodyatt, Chicago.
56 Absorption of Nitrogenous Products. O. Folin and W. Denis, Boston.
57 Tyrosin Content of Proteins. O. Folin and W. Denis, Boston.
58 *Influence of Bases on Rate of Oxidations in Fertilized Eggs. J. Loeb and H. Wasteneys. New York.
59 Important Chemical Difference between Eggs of Sea Urchin and Those of Star-Fish. A. P. Mathews, Woods Hole.
60 Influence of Hypertonic Solution on Rate of Oxidations in Fertilized and Unfertilized Eggs. J. Loeb and H. Wasteneys, New York.
61 Do Gliadin and Zein Yield Lysin on Hydrolysis? T. B. Osborne and C. S. Leavenworth, New Haven, Conn.
62 *Influence of Fever on Elimination of Creatinin. V. C. Myers and G. O. Volovic, New York.
63 Normal Protein Metabolism of Rat. O. Folin and J. L. Morris, Boston.
64 *Is Narcosis Due to Asphyxiation? J. Loeb and H. Wasteneys, New York.
65 Chemistry of Gluconeogenesis. A. I. Ringer, E. M. Frankel and L. Jonas, Philadelphia.
66 Action of Leukocytes on Hexoses. P. A. Levene and G. M. Meyer, New York.
67 *Theory Concerning Intermediary Metabolism of Carbohydrates and Proteins. H. D. Dakin and H. W. Dudley, New York.

55. Sarcolactic Acid in Diabetic Muscle.—Muscles of glycogen-free animals form some sarcolactic acid (about 30 per cent. of the normal). This lactic acid, Woodyatt says, cannot come from glycogen but must arise from preformed sugar, or directly from certain amino- or fatty-acids. The muscle of a case of severe human diabetes formed even less lactic acid than that of fully phlorhizinized dogs. This suggests to Woodyatt an impaired power to dissociate glucose on the part of the diabetic muscle since such muscles are bathed with an abnormally high quantity of sugar which—if available—should yield more lactic acid than is found in the muscle of phlorhizin diabetes. With D: N ratios of approximately 3.65:1, post-mortem analyses of dog muscles and livers show no glycogen. With ratios of 2.8 or 3.0:1 this is not necessarily the case, and one cannot assume that with a constant D: N ratio of 2.8:1 an animal is free from glycogen.

58. Oxidations in Fertilized Eggs.—It is shown by the authors that bases influence the rate of oxidations differently in the fertilized and unfertilized egg of *Strongylocentrotus purpuratus*. Strong bases, like NaOH and $N(C_2H_5)_4OH$, accelerate the rate of oxidations in the fertilized egg of *S. purpuratus* only if their concentration is above $10^{-3}N$; this concentration suppresses the phenomena of development of the egg. Weak bases, like NH_4OH and methylamin, accelerate the rate of oxidations in the fertilized egg only slightly; the reason being that the weak bases are too slightly dissociated to produce in the concentrations admissible in the experiment the injurious (etching?) effects which the highly dissociated bases produce in this case. The authors do not believe, however, that these facts do not warrant any conclusion concerning the localization of the normal processes of oxidation in the egg.

62. Effect of Fever on Creatinin Elimination.—Myers and Volovic found that the excretion of creatinin closely follows the rise in temperature during fever, whether the hyperthermia is of infective origin or artificially induced. The highest continued temperature (about 42 C.) has been found to be accompanied by the highest creatinin elimination. In nine experiments on rabbits inoculated with *Bacillus suipestiens*, the percentage increase at the height of the fever over the control elimination averaged 36 per cent. In three experiments, where hyperthermia was artificially induced, the average increase was 34 per cent. This is believed to show that the increased elimination of creatinin is due entirely to the hyperthermia. The view is expressed that the increased creatinin elimination during fever still represents the normal endogenous metabolism, which is proceeding here at an abnormal intensity due to the high temperature. It is possible that this is in accord with the law of the increased velocity of chemical reactions at increased temperatures. It is suggested that the amount of the increased creatinin excretion may be of value in indicating the increase in nitrogenous metabolism due to simple pyrexia. The increased excretion of nitrogen in physiologic fever corresponds very well with the increased excretion of creatinin (35 per cent.), but in toxic fevers, the excretion of nitrogen may be much greater. In the series of toxic fevers creatin was generally found to be excreted, and when present was observed, as a rule, following the crisis of the fever. In the series of physiologic fevers an elimination of creatin was not detected. It is reasonable to believe that creatin is excreted during fever, because the protein is drawn on to supply unusual demands (e. g., to supply energy in the absence of carbohydrate), and in this abnormal catabolism, creatin is set free more rapidly than the body can oxidize it. In fever, creatinin, though increased, still appears to indicate the amount of a certain type of normal endogenous metabolism, while creatin possibly indicates the amount of abnormal endogenous metabolism.

64. **Is Narcosis due to Asphyxiation?**—It is shown by the authors that chloral hydrate, ethyl urethan, chloroform and various alcohols produce complete narcosis in the fertilized eggs of the sea urchin without practically lowering the rate of oxidations in the egg.

67. **Metabolism of Carbohydrates and Proteins.**—It is shown by Dakin and Dudley that by a suitable choice of experimental conditions it is possible to convert at low temperatures *α*-amino- and *α*-hydroxy-acids into *α*-ketonic aldehydes. Lactic acid and alanin for example, yield methyl glyoxal. Methyl glyoxal is acted on by enzymes named "glyoxalases," present in the animal body, with formation of both *d*- and *l*-lactic acid. When given to the glycosuric animal methyl glyoxal and both *d*- and *l*-lactic acids yield glucose. Methyl glyoxal is believed, therefore, to be an intermediate product in the mutual interconversion of alanin, lactic acid and glucose. The relationship in the living cell between alanin, lactic acid, methyl glyoxal and glucose is believed to constitute a delicately adjusted equilibrium concerned with the maintenance of approximate neutrality. The view is advanced that *α*-ketonic aldehydes may represent the first step in the metabolism of amino-acids, and that the formation of these substances furnishes an adequate explanation of the origin of *α*-ketonic acids from *α*-amino-acids. Furthermore it affords an explanation of the fact that *α*-hydroxy-acids are not obligate steps in the catabolism of most *α*-amino-acids. The relation of *α*-ketonic aldehyde formation is discussed in conneeton with the mechanism of glucose production in the glycosuric animal, with the synthesis of pyrimidin derivatives, and in connection with the mechanism of alcoholic fermentation.

Kentucky Medical Journal, Bowling Green

June 1, XI, No. 11, pp. 427-496

68 Will Friedmann's Serum Cure Tuberculosis? J. Glahn, Owensboro.
69 *Fractures. J. G. Sherrill, Louisville.
70 *Serotherapy for Cerebrospinal Meningitis. D. K. Clark, Louisville.
71 *Management of Placenta Praevia. W. B. Gossett, Louisville.
72 Management of Puerperal Eclampsia. W. B. Moore, Cynthiana.
73 Practical Nurse. J. O. Jenkins, Newport.
74 *Diagnostic Errors in Diseases of Children. R. H. Moss, Henderson.
75 *Vaccine Therapy. J. H. Blackburn, Bowling Green.
76 Indications for Removal of Tonsils, with Consideration of Some Results of Total Extirpation. J. M. Ray, Louisville.
77 Unexplained Pyrexias of Early Childhood. W. A. Jenkins, Louisville.
78 Care of Newborn. T. A. Frazer, Marion.
79 *Passing of Destructive Operations in Obstetrics. E. Speidel, Louisville.
80 *Perinephritis. W. L. Cash, Princeton.
81 Present Status of Subconjunctival Injection. C. T. Wolfe, Louisville.
82 Subparietal Rupture of Kidney with Report of Cases. A. H. Barkley, Lexington.
83 Early Diagnosis of Arteriosclerosis. W. C. Ussery, Paris.
84 Sanitary Problems of School Children. W. P. Drake, Bowling Green.
85 Something about Maxillary Antrum. A. O. Pfingst, Louisville.
86 Five Cases of Intracapsular Fracture of Femur. J. L. Atchison, Campbellsville.
87 Two Cases of Typhoid Infection of Appendix. S. H. Ridgway, Shepherdsville.
88 Malignant Tumors, Recent Advances as to Indications for Treatment. N. Evans, Murray.

69 and 75. Abstracted in The Journal, November 30, p. 1998.

70, 71, 74, 79 and 80. Abstracted in The Journal, November 23, pp. 1917 and 1918.

Laryngoscope, St. Louis

May, XXIII, No. 5, pp. 561-640

89 Esophageal Tuberculosis. L. B. Lockard, Denver.
90 Obliteration of Mastoid Excavation by Implantation of Tissue-Flap Taken from Temporal Muscle. S. Iglauer, Cincinnati.
91 Decompression for Relief of Disturbances of Auditory Apparatus of Intracranial Origin. W. P. Eagleton, Newark, N. J.
92 Resonators, with Special Reference to Schaefer Apparatus. R Sonnenschein, Chicago.
93 Some Original Endoscopic Methods. R. H. Johnston, Baltimore.
94 Foreign Body (Instrument) in Sphenoid Sinus. I. M. Heller, New York.

Maine Medical Association Journal, Portland

June, III, No. 11, pp. 1355-1392

95 Problems of Obstetric Practice. W. W. Chipman, Montreal.
96 Morphinism: Its Probable Pathology and Rational Treatment. H. B. Webster, Castine.

Medical Record, New York

June 14, LXXXIII, No. 24, pp. 1059-1104

97 Results from Vaccination against Tuberculosis (von Ruck's Method) C A. Julian, Thomasville, N. C.
98 Ambard's "Uremic Constant," or Estimation by Mathematics of Functional Value of Kidneys. C. K. Austin, Paris, France
99 Roentgenoscopic Examinations vs. Clinical Methods in Diagnosis of Gastric Disease. J. D Dunham, Columbus, O.
100 Importance of Adopting a More Accurate Method of Examination for Color-Blindness J A. Nydegger, Baltimore.
101 Glycosuria and Bulgarian Bacillus. S. H. Blodgett, Boston.
102 Some Clinical Features of Painful Oxaluria. B. G. R. Williams, Paris, Ill.
103 Present Status of Tuberculin Tests. C. B. Slade, New York.

Military Surgeon, Chicago

May, XXXII, No. 5, pp. 427-526

104 Bloodiest Day in American History—Antietam. L. C. Duncan, U. S. Army.
105 Cooperation of Public Health Service with Navy in Time of War. T. W. Richards, U. S. Navy.
106 Traumatic Rupture of Intestines; Operation; Recovery. D. P. Card, U. S. Army.

New Jersey Medical Society Journal, Orange

June, X, No. 1, pp. 1-54

107 Preventive and Unnecessary Surgery, Based on Investigation of Earliest Symptoms of Surgical Diseases and Comparatively Inferior, Immediate and Permanent Results of Intervention in Later Stages. J. C. Bloodgood, Baltimore.
108 Infant Mortality. T. N. Gray, East Orange.
109 Renal Tuberculosis; Report of Case. A. H. Lippincott, Camden.
110 Obstetrics and Gynecology in History of Our Race. E. J. Ill, Newark.

New Orleans Medical and Surgical Journal

June, LXV, No. 12, pp. 851-926

111 Importation of Foundlings—Sociologic Problem. H. D. King, New Orleans.
112 Modern Conceptions of Diabetes Mellitus. I. I. Lemann, New Orleans.
113 Duties of Medical Man as Expert and Witness and Importance of Careful Examination of Railway Accident Cases. E. D. Martin, New Orleans.
114 Value of Roentgenogram in Medicolegal Questions. E. C. Samuel, New Orleans.
115 Some Views on Erythema Multiforme. I. Dyer, New Orleans.

New York Medical Journal

June 14, XCVII, No. 24, pp. 1217-1268

116 Gonorrhea from Pathologic Standpoint. G. A. Wyeth, New York.
117 Relation of Trauma to Bone Tuberculosis. H. A. Wilson and R. C. Rosenberger, Philadelphia.
118 Diagnostic Study of Face. H. A. Knox, Ellis Island, New York.
119 Principles of Freud's Psychology M. J. Karpas, New York.
120 Instantaneous Transformation of Mercuric Compounds to Calomel, and Application of Process in Cases of Mercuric Poisoning. G. A. Linhart, New Haven, Conn.
121 Hallucinations of Hearing and Diseases of Ear. J. H. W. Rhein, Philadelphia.
122 Erythromelalgia. A. E. Fossier, New Orleans, La.
123 Prognostic Value of Arneth Blood-Count in Pulmonary Tuberculosis. J. Kramer, New York.
124 Three Cases of Cesarean Section. A. M. Hilkowich, New York.
125 Chronic Mediastinitis following Osteomyelitis of Sternum. H. M. Armitage, Chester, Pa.

Oklahoma State Medical Association Journal, Muskogee

June, VI, No. 1, pp. 1-61

126 Intussusception: Report of Two Cases. J. H. White, Muskogee.
127 *Few Medical Thoughts.* C. J. Fishman, Oklahoma City.
128 Melancholia of Involution. F. B. Erwin, Wellston.
129 Skin Grafting. J. Culbertson, Whitefield.
130 Thoroughness in All We Do. G. A. Morrison, Poteau.

Wisconsin Medical Journal, Milwaukee

May, XI, No. 12, pp. 369-408

131 Apparently Non-Suppurative Nasal Sinus Disease. S. G. Higgins, Milwaukee.
132 Toxemias of Pregnancy. W. G. Darling, Milwaukee.
133 Psycho-Analysis. W. F. Becker, Milwaukee.
134 Two Cases with Tumors, Originating from Region of Hypophysis. F. Pfister, Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Australasian Medical Gazette, Sydney

April 12, XXXIII, No. 15, pp. 325-354

1 Exophthalmic Goiter. C. MacLaurin.
2 Endemic Goiter. W. C. Howle.

April 19, No. 16, pp. 355-386

3 Eruption of Skin Caused by Poison Ivy. E. C. Stirling.
4 Congenital Hernia of Diaphragm Through Esophageal Opening, Extrapleural and Occurring into Right Thorax. (To be continued.) H. Rischbieth.

April 26, No. 17, pp. 387-412

5 Congenital Hernia of Diaphragm Through Esophageal Opening, Extrapleural and Occurring into Right Thorax (Concluded.) H. Rischbieth.
6 Case of Tick-Bite Followed by Wide-Spread Transitory Muscular *Paralysis.* E. M. Eaton.

Clinical Journal, London

May 21, XLII, No. 7, pp. 97-112

7 Fractured Femur. C. G. Watson.
8 Angina Pectoris. R. Saundby.
9 Autoplastic Ovarian Graft and Its Clinical Value. B. Whitehouse.
10 Diagnosis and Treatment of Skin Diseases in School Children. F. Gardiner.

May 26, No. 8, pp. 113-128

11 Common Mistakes in Treatment of Diseases of Women. F. J. McCann.
12 Disorders of Speech as Evidence of Nervous Disease. D. Forsyth.
13 Certain Pericardiac Adventitious Sounds. C. Coombs.

Dublin Journal of Medical Science

May, III, No. 497, pp. 321-396

14 Case of Tabes Dorsalis with Spinal Lesion. F. C. Purser.
15 Iodoform and Benzoyl Chlorid in Pulmonary Tuberculosis. J. B. Coleman.
16 Return Cases of Scarlatina. J. M. Day.

Indian Medical Gazette, Calcutta

May, XLVIII, No. 5, pp. 168-208

17 Serodiagnosis of Syphilis. W. D. Sutherland.
18 Life Assurance in India. A. Caddy.
19 Judicial Hanging. J. Mulvany.
20 *Can Cholelithiasis Be Treated Successfully without Operation? T. H. Delany.

20. **Treatment of Cholelithiasis.**—Delany cites four cases in which he gave ipecac (pulv. ipecacuanha, gr. 1, with pulv. ipecacuanhae et opii gr. 1, every four hours) with very satisfactory results. He varied the Dover's powder according to the needs of the case. He says the drug is vomited at first in most cases, but this can usually be arrested by combining it with some preparation of opium.

Journal of Pathology and Bacteriology, Cambridge

April, XVII, No. 4, pp. 432-630

21 *Certain Changes in Voluntary Muscles in General Diseases. R. C. Jewesbury and W. W. C. Topley.
22 *Method for Plate Culture of Anaerobic Bacteria. J. W. M'Leod.
23 *Action of Diuretics in Experimental Nephritis. A. E. Boycott and J. H. Ryffel.
24 *Irritation Giant Cells in Dermoid and Epidermoid Cysts. M. J. Stewart.
25 *Changes Observed During Absorption of Experimentally Produced Sarcomas. G. W. Nicholson.
26 *Aberrant Epithelial Structures Found in Renal Cortex in Course of Eighty Consecutive Post-Mortems. J. S. Dunn.
27 Anemia Produced by Injection of Hemolysin Obtained from Streptococci; Natural and Acquired Immunity to Streptolysin. J. W. M'Leod and J. W. M'Nee.
28 *Bacteriology of Rheumatism—Further Evidence in Favor of Causal Relationship of Streptococci. J. M. Beattie and A. G. Yates.
29 Improved Method for Histologic Study of Arteries. A. H. MacCordick.
30 *Treatment of Gonorrheal Infections by Vaccines, and Regulation Thereof by Complement Fixation Test. J. E. R. M'Donagh and B. G. Klein.
31 Culture in Vitro of Some Tissues of Adult Frog. G. H. Drew.
32 Pathology of Ceco-Colic Sphincteric Tract of Colon. D. P. D. Wilkie.
33 Action of Tuberculin and Seleniol on Mouse Cancer. C. L. Williams.
34 Nitrogen Content of Malignant Tumors in Man. R. A. Chisolm.
35 Method of Analysis of Brain Lipoids. J. L. Smith and W. Mair.
36 "Lipoids" Which Resemble Lecithin in Forming Hemolysins Along with Cobra Venom. J. Cruickshank.

21. **Changes in Voluntary Muscles.**—The authors state that in wasting diseases the voluntary muscles show varying degrees of histologic change bearing little relation to the actual degree of wasting present. These changes consist of alterations in the size, shape and staining reactions of the fibers, increase in the fiber nuclei, and alteration in their arrangement, sometimes resulting in the production of false giant cells. In many cases there is also a relative increase of the interstitial tissue. In acute general diseases muscle changes are extremely slight, consisting of some degree of hyalin and granular change, and in a certain small number of cases of fatty degeneration. In certain disorders associated with an abnormal carbohydrate metabolism there is a great increase in the amount of interstitial fat present. In many cases small collections of fat droplets are present in the neighborhood of the fiber nuclei; these are common in advanced life, rare in children, and almost entirely absent in animals. They bear no relation to true fatty degeneration, and it is doubtful whether they have any pathologic significance. True fatty degeneration appears to be much less common than is usually stated, but it occurs to a marked degree in cases of diphtheritic toxemia, in certain blood disorders, and in poisoning by phosphorus. Of the many muscles stained for glycogen, it was only strikingly present in each of the three cases of diabetes examined. Amyloid change was not found in any case examined.

22. **Plate Culture of Anaerobic Bacteria.**—The apparatus described by McLeod consists of two parts, a porcelain dish to contain the pyrogallic acid and caustic soda solutions and a special Petri capsule which has its free margin turned inward and upward. The porcelain dish is a hollow chamber. It is bisected in the lower two-thirds of its depth by a vertical partition and there is a circular aperture in the center of its upper surface. Around the margin of the upper surface is a shallow groove which is filled with plasticine. In using the apparatus, 5 c.c. to 7 c.c. of a 15 per cent. solution of pyrogallic acid is run into the compartment of the chamber A; this can most easily be done with a large pipet. Five c.c. to 7 c.c. of a 10 per cent. solution of caustic potash is introduced into the other compartment B. The Petri dish is then pressed down into the "plasticine" in the groove, and the "plasticine" is pushed up against its outer margin to ensure the proper sealing of the chamber. As soon as the access of fresh oxygen from without has been thus cut off, a mixture of the pyrogallic acid and caustic potash solutions is effected by tilting the porcelain dish so that the solutions run over the partition and react with one another. Any condensation water which may form is retained in the groove.

23. **Diuretics in Experimental Nephritis.**—When the convoluted tubules had been put out of action by uranium nitrate the authors found, contrary to expectation, that caffein excited the secretion of urine, and equally with Ringer's fluid

or 5 per cent. salt solution was an effective diuretic. In any case in which a "secretory" diuretic has failed, "mechanical" diuretics have also failed, and where the one sort has been effective the other sort has acted equally. The response of the normal kidney to caffein is slower than to the other diuretics used. The response of the nephritic kidney to all three diuretics is slower than that of the normal kidney, and the response to caffein remains slower than to Ringer or salt solution. The urine produced by the kidney in the early stages of uranium nephritis is smaller in amount and contains less chlorid than normal. Caffein urine in normal animals contains less chlorid than that produced by the injection of Ringer or salt solution; in nephritic animals all three urines contain less chlorid than normal, and caffein urine still contains less than the other two. In the course of the response to any one diuretic the concentration of chlorid in the normal urine increases as the rate of secretion decreases; in the nephritic urine there may be a very slight increase in concentration, or the concentration may fall as the rate of secretion becomes less. Uranium causes glycosuria in normal rabbits. This has experiment also causes glycosuria: the method of to be taken into account in considering the variations in the concentration of chlorid.

24. **Giant Cells in Dermoid Cysts.**—In the great majority of ovarian dermoids Stewart found that teratomatous structures are confined to the embryonal rudiment or its immediate neighborhood, while the remainder of the cyst is lined by a layer of granulation tissue containing many giant cells. The giant cells are of the irritation or foreign body type, and both they and the granulation tissue generally appear in response to irritation of the unprotected fibrous-tissue wall of the cyst by the contained epidermis debris or its disintegration products. The process is analogous to that which follows the experimental injection subcutaneously of cholesterin, fatty acids, etc. That hairs are unnecessary for the formation of this cellular layer is shown by the appearance of the latter in an epidermic cyst where hairs were nonexistent. That cornified epithelium alone may stimulate the formation of similar giant cells is shown by their occurrence with highly keratinous epitheliomas.

25. **Absorption of Experimental Sarcomas.**—A summary of Nicholson's investigation of the changes observed in the regression of sarcomas gives the following results: The sarcoma cells either become differentiated into fibrous tissue or they degenerate and disappear. Necroses do not occur in excess of those found in growing tumors. The surrounding tissues react and produce granulation tissue, which invades the sarcoma and destroys it, partly by means of phagocytes but mainly by some other means, mechanical or chemical, the precise nature of which cannot be recognized with the microscope. The hemorrhages which occur around the growths do not differ from those in healthy tumors. They do not (in sarcomas at any rate) act as a causative agent, but are to be regarded as indications of the acuteness of the reaction.

26. **Aberrant Epithelial Structures in Kidney.**—Epithelial abnormalities, namely, suprarenal rests, adenopapillary tissue, and papilliferous cysts, were found by Dunn fairly frequently in the kidneys of a series of eighty consecutive cases. He points out that any of these aberrant epithelial structures might conceivably give rise to malignant tumor formation, but of the three the papilliferous cysts, from their peculiar histologic features, suggest themselves as the most probable origin of tumors of the Grawitz type.

28. **Bacteriology of Rheumatism.**—Beattie and Yates endeavored to cultivate streptococci, which they believe to have a causal relationship, from the synovial membranes of the knee-joints, from the tonsillar region, from the blood and from other tissues. in 129 cases, with eighty-one negative and forty-one positive results. Of the cases with rheumatic history, nineteen out of thirty-one, or 61 per cent., produced arthritis, one produced septicemia and eleven had no obvious results. Of eight joints with definite history or signs of rheumatism from which they were able to isolate a streptococcus, in only one was there a clear failure of this organism to produce arthritis in rabbits. This organism was isolated from a case of chronic myocarditis with no recent rheumatic attacks. Of the cases with no rheumatic history two out of nine, or 22 per cent. produced arthritis and seven produced septicemia. Of the cases of tonsillitis without history, one produced arthritis and four produced septicemia. These results the authors believe illustrate the non-septicemic character of the organism which they associate with rheumatism, for in the thirty-one cases with rheumatic history there occurred only one death from septicemia; whereas in the non-rheumatic, eleven out of fourteen died from septicemia, and the three in which arthritis was produced were possibly rheumatic. In their opinion the organism gains entrance from the mouth or other part of the alimentary tract; it becomes lodged in certain situations, particularly in serous membranes, and it produces its effects by poisons which are distributed from these centers. Of eleven patients examined, in whom there was active rheumatism at the time of examination in eight no organisms were found in the blood, and in the other three a streptococcus was isolated which produced typical arthritis in rabbits. The twelfth case was one of malignant endocarditis with no rheumatic history, and from this a pneumococcus was isolated.

30. **Vaccines in Gonorrheal Infections.**—The complement fixation test in gonorrheal infections the authors regard as a valuable aid to diagnosis. It can be used for regulating vaccine treatment. If the disease is in the latent stage and the body has need to form antibodies, the result of an injection of potent vaccine will be to stimulate their production. If antibodies are already present, the injection of vaccine in sufficient amount will temporarily neutralize or inhibit the same. The antibodies in such cases serve, apparently, to maintain the health of the body as a whole, without being adequate to destroy completely the foci of infection. The new formation of antibodies, following on their temporary disappearance, probably differs in some way which is not yet explained. The injection of a potent vaccine promotes a new artificial kind of immunity more effectual than that already established in the infected individual. Of the three methods of vaccine treatment tried, the intravenous autolyzed solution comes midway in its therapeutic action between an ordinary vaccine and a sensitized vaccine—both the latter given subcutaneously or intramuscularly. The vaccine sensitized with a human antigonococcus serum is far superior to the vaccine sensitized with immune horse serum. Vaccine treatment, provided it is only supplementary to the right local and general treatment, is in many cases necessary before a cure can be obtained.

Journal of Tropical Medicine and Hygiene, London

May 15, XVI, No. 10, pp. 145-160

37 Clinical Study of Malaria in Panama. J. P. Bates.

Medical Press and Circular, London

39 Intratracheal Insufflation of Ether. H. de L. Crawford.

May 21, XCV, No. 3863, pp. 537-564

38 Some Urethral Injuries and Treatment of Urethral Stricture. (To be continued.) R. Morison.
40 Alimentary Toxemia in Dermatology. W. K. Sibley.
41 Bene Diagnoscit, Bene Curat. H. Macnaughton-Jones.

May 28, No. 3864, pp. 565-592

42 Some Urethral Injuries and Treatment of Urethral Stricture. R. Morison.
43 Argument for Large State Insane Hospital. T. Clouston.
44 New Spirochete of Human Blood and Its Bearing on Pathology. H. D. McCulloch.
45 Necessity for Medical Examination of All Workers. J. C. McWalter.

Practitioner, London

June, XC, No. 6, pp. 909-1036

46 *Treatment of Bronchial Asthma. A. Latham.
47 *Nasal Disease in Relation to Asthma. D. Grant.
48 *Asthma in Children. E. B. Smith.
49 Pellagra. C. R. Box.
50 Pathology and Treatment of Uterine Hemorrhage. B. Whitehouse.
51 Retroflexion of Uterus. A. Donald and W. F. Shaw.
52 Headaches of Organic Origin. G. Holmes.
53 Headache and Its Treatment. G. De Swietochowski

54 Treatment of Neuralgia and Facial Spasm by Nerve-Injections. H. Campbell.
55 *Perforating Ulcers of Stomach and Duodenum.* J. Morley.
56 Direct Combined Examination of Single Radiograph and Patient: Episcope. W. Cotton.

46. **Treatment of Bronchial Asthma.**—Light cauterization of the nerve of the septum in suitable cases, adequately carried out, Latham says, produces great relief in a large proportion of cases. He has seen a number of patients in whom this procedure has been carried out by capable men. In few instances does it cure, for its effects are seldom permanent. In a large number it gives great relief, and in a considerable proportion of cases this relief may last for several years. Such cauterization, he says, can only act by virtue of diminishing the capacity of dust or odors for stimulating unduly sensitive nasal nerve endings, and so inducing a reflex effect on the bronchial tubes. Latham always makes minute enquiries as to the possibility of dust being a contributing factor in any case of asthma. Such questions as the use of woolen garments which, on being drawn over the head, give rise to a shower of small particles, or the use of feather boas, eider-down quilts, or feather beds must always be investigated. Again, blankets will give rise to much dust, which can be avoided by suitable coverings. He enquires as to the surroundings of the patient's house, and the presence of animals or flowers in the house. He makes a point of carefully examining the nose. He endeavors to ascertain whether the excitability of the nervous system is being increased by errors of diet, or the condition of the bowels or other organ.

47. **Nasal Disease in Relation to Asthma.**—When nasal disease is present, even allowing for the rare occasional increase of temporary discomfort, Grant says, the coincidence of asthma is an additional indication for operation. Many of the disappointments are due to the obstinate nature of the nasal disease.

48. **Asthma in Children.**—If the attacks occur only at night, Smith gives a regular mixture of potassium iodid, belladonna and ethereal tincture of lobelia, to be given at bedtime. It is safe to give ½ grain of iodid for each year of life, 2 to 10 minims of tincture of belladonna from infancy to 10 years old, and lobelia in minim doses for every year of life up to 5 minims. If the attacks occur by day and night, he has no hesitation in giving the same prescription in rather smaller doses, three times a day. He thinks iodids will be found the sheet anchor in this disease in early life; when they fail, it is rare to get relief with other drugs. He sounds a note of warning. Iodids should be given regularly for a few weeks, six to eight, and then left off for a fortnight and replaced by a tonic, such as arsenic, in the interval, then the course of iodids can be renewed. In this way, it will be found that the iodid will retain its effect much longer. Smith has used the liquid extract of grindelia recently, and thinks, perhaps, there is a little improvement where other drugs failed. Calcium, he is not satisfied, does much good. It may be given as the syrup of the lactophosphate, or as calcium chlorid. With the calcium, he has lately combined 4 or 5 minims of epinephrin and some parents seem to think distinct relief was gained from this mixture. In an acute attack in an infant, hot baths, as in convulsions, seem to have a sedative effect, and some folk still swear by the old-fashioned steam kettle, the steam from which may be medicated in various ways. An injection of 3 to 5 minims of epinephrin 1/1000 can be given. If the child is very bad, nascent oxygen, and, perhaps, a very small dose of morphin sulphate.

Sei-I-Kwai Medical Journal

May, XXXII, No. 5, pp. 63-93

57 Third Report of Method of Increasing Body Weight. H. Sewaki.

Archives des Maladies de l'App. Digestif, Paris

April, VII, No. 4, pp. 181-240

58 *Coma from Undiagnosed Gastric Cancer. (Coma dyspeptique et coma cancéreux.) A. Cade and Roubier.
59 *Swallowing of Air with Cholelithiasis. (Fréquence de l'aérophagie associée à la lithiase biliaire.) H. Mauban.
60 Tuberculous Stenosis of the Pylorus in Young Man. F. Dauwe.

58. **Coma from Undiagnosed Gastric Cancer.**—Cade and Roubier had their attention called to this subject by the case of a coachman of 57 who had lost his appetite and grown very thin in the last two months and had occasional pain in the stomach but no vomiting or difficulty in swallowing. Then in two weeks a syndrome developed resembling asthenic bulbar paralysis, followed in a few days by coma; autopsy revealed a cancer of the cardia. The history of coma occurring from dyspepsia is reviewed: Senator had two patients with gastric cancer die in coma resembling that of diabetes, and a few other cases are on record. The inanition is an important factor, and this should be combated. Once installed, the coma should be treated with alkalines or, possibly, prompt operative measures to overcome the retention, the cause of the inanition and absorption of toxic gastric products. Although coma from this cause is rare, yet the possibility of it is another argument in favor of surgical measures in appropriate cases.

59. **Swallowing of Air with Cholelithiasis.**—Mauban has encountered twenty-six cases within the last year in which very nervous persons suffered from severe but intermittent pain in the stomach, conditions in this respect being normal in the interim. There was a pronounced tendency to swallow air, and this intermittent aerophagia and the epigastric pains were both secondary to gall-stone trouble. In ten of the cases the aerophagia and epigastralgia had been diagnosed before the cholelithiasis had been suspected; in five cases they developed along with gall-stone colic, and in five they followed it. In the other cases the history of the onset was unknown.

Bulletin de l'Académie de Médecine, Paris

May 6, LXXVII, No. 17, pp. 351-402

61 Tissues Living Outside the Organism. (Nouvelles expériences du Dr. Alexis Carrel.) S. Pozzi.

May 13, No. 18, pp. 403-472

62 *Brushing of Clothes Soiled with Sputum a Prolific Source of Tuberculosis. Chausse and M. Letulle.*
63 History of Transmission of Aphthous Fever from Animal to Man. Cadiot. (A propos de la stomatite dite aphteuse.) V. Galippe.
64 *Dosage of Carbon Dioxid Snow. (Dosage en cryothérapie locale.) M. and H. Béclère.

May 20, No. 19, pp. 475-501

65 *Wholesale Vaccination against Typhoid. (Résultats de la *vaccination antityphoidique par le vaccin polyvalent.*) H. Vincent. (Vaccinothérapie de la fièvre typhoide.) Chantemesse.

64. **Dosage of Carbon Dioxid Snow.**—Béclère applies a thin sheet of cork, cut out over the lesion, to protect the adjoining tissues during the application of the solid carbon dioxid. He does not use it in the form of a pencil but in the form of melting snow contained in a small silver receptacle of a shape to fit exactly over the lesion. This ensures asepsis and permits more exact dosage, graduated by the time of application measured with a stop watch. The pressure is also graduated. The three factors for correct dosage, the temperature, the duration of the application and the pressure on the skin are thus entirely under control and dosage. Béclère's instrument for the purpose consists of the silver tube for the dioxid snow, inside a double sheath of hard rubber or cork. The bottom of the snow tube is a very thin sheet of copper or silver. A spring is arranged on the top of the tube, and as the instrument is pressed on the skin an index travels along a graduated line showing exactly the amount of pressure being applied to the spring, and hence the pressure being exerted by the snow tube on the skin. The solid dioxid in the metal tube is melted by the action of ether, alcohol or acetone. The temperature is maintained at about the same point with either of these as in the solid form of the carbon dioxid. The acetone dissolves the dioxid a little quicker than alcohol. All danger of blistering is averted by treating the spot after the application of the snow as if it were a fresh burn. The preferable technic for this seems to be to paint the region frozen by the snow with a saturated alcoholic solution of picric acid.

65. **Vaccination against Typhoid.**—Vincent relates what he thinks are the first experiences in any country of wholesale vaccination of an entire community after the outbreak

of an epidemic of typhoid. A hundred cases developed in two months at Paimpol, a town of 2,800 inhabitants, and a vigorous campaign of vaccination was at once started, vaccinating all the young people and young women as the most liable to contract the disease. None of the 400 vaccinated contracted it and not another case developed as soon as the receptive part of the population had been given the third injection. Two families refused to be vaccinated and each had a case afterward; then one of the families had all the members vaccinated and had no further cases, while four more members of the family which still refused the vaccination came down with typhoid. In another town where typhoid was raging, the mayor called a mass meeting and told the citizens of the advantages of being vaccinated and nearly every one present asked for it. Excluding the sick, the aged and those who had already had typhoid, nearly the entire population was vaccinated and the epidemic died out at once. When persons already in the clutches of typhoid were vaccinated, the disease ran an exceptionally mild course. The number thus vaccinated in the two towns was 712 out of a total civilian population of 3,500.

Lyon Médical, Lyons

May 11, XLV, No. 19, pp. 1005-1060

66 Adiposis Dolorosa in Connection with Sciatica. (Sur une variété d'adipose douloureuse.) M. Favre and A. Tournade.
67 Moving Pictures of the Mechanism Involved in Moving the Hand. (La radio-cinématographie des mouvements de pronation et de supination de la main.) M. Jaboulay.

Revue Médicale de la Suisse Romande, Geneva

May, XXXIII, No. 5, pp. 357-436

68 *Banti's Disease in Children. A. D'Espine.
69 From the Seat of War. (Notes de chirurgie de guerre. Campagne de 1912-13.) A. C. Matthey.
70 Excellent Results from Ovarian Treatment in Pulmonary Tuberculosis. Jaquerod.

68. **Banti's Disease in Children.**—D'Espine reports two cases in infants nearly 2 years old with the autopsy findings, and tabulates the details of sixteen other cases in children he has compiled from the literature. Three were under ten and thirteen between 10 and 17. The first symptoms had been observed from a few months to nine years before. Wolff has also reported a case in a rachitic infant. This brings to nineteen the number of cases of this disease known in children. In eight cases the symptoms were merely enlargement of the spleen and anemia—the first stage; in seven cases there were in addition hemorrhages, especially in the stomach and intestines, urobilinuria and slight jaundice and ascites. In four cases the disease had progressed to confirmed cirrhosis. In five cases the first symptoms were noticed at the age of 5. Splenectomy was done in eight cases with recovery of all but one of the children; this group includes three children in the advanced stage of the disease. In one of the older children the splenectomy was supplemented by omentopexy and the patient recovered although there was considerable atrophy of the liver. In two cases the patients recovered spontaneously. One was a youth of 17, so debilitated that the contemplated splenectomy was abandoned; he was tapped fifteen times in four months and 64 liters withdrawn. Then he began to improve and seemed to be in good health with full earning capacity restored when reexamined fifteen months later. The only trace of his former trouble is that the spleen is still large and hard. In the other case of spontaneous recovery the disease gradually developed at the age of 5 and during ten years the girl required tapping on a few occasions. The spleen was large, hard and smooth, but the liver was apparently normal and there was no jaundice. At 7 the child had hematemesis and melena and again after pneumonia at 12, after which the health seemed to be permanently good until 15, when there was another gastro-intestinal hemorrhage without apparent cause, and then the spleen subsided gradually to normal size. At 17 the girl was in perfect health and has so continued to her present age of 25. It seems probable that the beginning of Banti's disease in adults dates from early childhood in many cases. There seems to be an unmistakable connection between splenomegaly and rachitis; many cases of rachitic splenomegaly, assumed to be of syphilitic origin, were probably in reality incomplete forms of Banti's disease. Inoculation of spleen tissue into animals in D'Espine's cases gave negative results, confirming the assumption that the disease is not of infectious origin. Banti has recently called attention to the similarity if not identity between the cases of hyperplasia and diffuse fibrosis of the spleen of non-parasitic origin and the cases of true Banti's disease. Sasuchin always found the degree of enlargement of the spleen proportional to the severity of the rachitic lesions. D'Espine remarks in conclusion that the only pathognomonic sign of Banti's disease is the cure of the anemia and cachexia by removal of the spleen.

Semaine Médicale, Paris

June 4, XXXIII, No. 23, pp. 265-276

71 *Tuberculous Processes Elsewhere than in Lungs and Bones. (Du traitement des ganglions tuberculeux et des affections tuberculeuses des gaines tendineuses, des muscles et du tissu souscutané.) F. de Quervain.

71. **Surgical Tuberculosis Elsewhere than in Bones and Joints.**—De Quervain remarks that secondary infection is much less to be feared in tuberculous affections of the lymph-nodes, tendon sheaths, muscle or subcutaneous tissue than in case of bone and joint tuberculosis. Operative treatment also has a much less injurious influence on functioning later, but at the same time radiotherapy or heliotherapy is generally sufficient. Tuberculous lymph-nodes can be cured by puncture or a very small incision unless some compact isolated lesion invites excision. Sanatorium treatment with exposure to the direct sunlight is not available for all, and roentgenotherapy is a fair substitute. He has found ample for the purpose a course of four or six exposures, one every three or four weeks, each dose a whole or half Sabouraud dose, filtering the rays through an aluminum screen 1 mm. thick. Climatic treatment and heliotherapy can be reserved for the cases in which roentgenotherapy fails or multiple foci require more general treatment. Six months or a year are generally necessary for a cure under these conditions. With a tuberculous process in a tendon sheath, radiotherapy is superior to operative measures as the latter are liable to impair functioning later. He had a striking instance of this recently, the flexor tendons of each hand being the seat of a tuberculous process; one side was treated with the knife, the other with radiotherapy but the functional outcome was decidedly better on the side of the latter. He warns that the ankle seems to be peculiarly susceptible to the Roentgen rays, and consequently great caution is necessary not to go above a total dosage of three or four Sabouraud doses. He excises the lesion without hesitation if it is in a muscle at a point where it will not entail functional disturbance. But if the sternocleidomastoid muscle is involved he is very careful to refrain from any measure which would affect its functioning. Iodoform injections are preferable here, and radiotherapy if the lesion is not too far below the surface. Below 4 cm. it is useless to hope for much influence from the rays. With lesions in the subcutaneous tissue, radiotherapy can generally be relied on; if this fails multiple incisions, curetting, balsam of Peru, phenol and camphor or silver nitrate will accomplish the cure.

Archiv für Gynaekologie, Berlin

XCIX, No. 3, pp 455-656. Last indexed May 31, p. 1747

72 Hypophysis Extracts in Obstetrics. (Pituitrinanwendung in der Geburtshilfe.) A. Foges.
73 *Arteriosclerosis of the Uterus and its Connection with Uterine Hemorrhage. (Die Gebärmuttersklerose.) F. W. Bukojemsky.
74 Morphology of Uterine Carcinoma. J. Obata.
75 Intraperitoneal Myoma of Round Ligament; Two Cases. E. Weishaupt.
76 *Ruptured Graafian Follicle as Point of Lessened Resistance. (Die klinische Bedeutung der Follikelsprungstellen im Ovarium.) F. Cohn.
77 Hyperemia and Hemorrhage in Female Genital Organs after Injection of Ovarian or Placental Extract. B. Aschner.
79 *Uncontrollable Vomiting of Pregnancy and the Pathologic Findings at Autopsy. (Die Beziehungen der Hyperemesis gravidarum zur akuten gelben Leberatrophie und sonstigen Sektionsbefunden.) P. Heinrichsdorff.

80 Galvanization plus Hypophysis Extract as Aid in Delivery. (Ueber die künstliche Einleitung der vorzeitigen und rechtzeitigen Geburt durch Galvanisation in Verbindung mit Pituitrin.) E. Vogelsberger.
81 Treatment of Extra-Uterine Pregnancy. E. Falk.

73. **Arteriosclerosis of the Uterus.**—Bukojemsky reports three cases of uncontrollable hemorrhage from the uterus compelling the removal of the organ. The women were between 40 and 52 and the uterus showed typical sclerosis of the walls and vessels, with necrosis in the vessel walls in one of the cases.

76. **Clinical Importance of Rupture of Graafian Follicles.**—Cohn concludes from his analysis of six cases that the ruptured follicle is a source of danger not only because it opens the contents of the follicle into the abdominal cavity but because it represents a weak point after it has healed. These weak points are liable to give way at any time and open a new communication between the corpus luteum and the abdominal cavity. The burst follicle is liable to bleed profusely, or there may be slight hemorrhage without symptoms but entailing adhesions later. The gaping follicle also invites infection; when infection occurs it is commonly with the gonococcus or tubercle bacilli. The burst follicle also invites the settling of cancer cells from a primary tumor elsewhere, and the ovary is thus a frequent site for cancer metastasis.

79. **Connection between Uncontrollable Vomiting of Pregnancy and Yellow Atrophy of the Liver, Etc.**—Heinrichsdorff declares that the liver affection or nephritis often found at autopsy is of too recent date, as a rule, to be the cause of the hyperemesis. When the uncontrollable vomiting occurs during the first half of the pregnancy, it may persist for weeks or months, but no organic changes can be found in any organ and the patient generally recovers at last. In the exceptional cases in which she succumbs to inanition there are no positive autopsy findings. Eclampsia or acute yellow atrophy of the liver in pregnancy may occur in the midst of health or as a sequel to uncontrollable vomiting. The uncontrollable vomiting does not seem to be the result of an intoxication, but it may pass into an intoxication. The changes in the organs found at autopsy are of recent development in comparison with the long established hyperemesis. The aggravation and change in the clinical picture as eclampsia or acute yellow atrophy of the liver develops are due to an intoxication, and are *not* the third stage of the vomiting trouble as is generally assumed.

Archiv für klinische Chirurgie, Berlin

CI, No. 2, pp. 291-571. Last indexed June 14, p. 1926

82 *The Later Fate of Patients after Nephrectomy. (Das spätere Schicksal der Nephrektomirten.) H. Kümmell.
83 *Fractures of the Pelvis; Eighty Cases. (Beckenbrüche.) J. Jensen.
84 Multiple Brown Tumors with Osteomalacia. Molineus.
85 *Rupture of Liver and Bile Passages. (Casuistischer und experimenteller Beitrag zur Leber- und Gallengangsruptur.) O. Orth.
86 *Treatment of Bone and Joint Tuberculosis. (*Knochen- und Gelenktuberkulose.*) C. Garrè.
87 *Penetrating Wounds of the Knee. R. Müller.
88 *Testicle Tumors. (Zur Kenntnis der Hodengeschwülste und die *Bedeutung des Traumas für ihre Entstehung.*) T. Myata.
89 *Conditions in regard to Continence after Operations for Rectal Cancer. H. Körbl.
90 *Duodenal Ulcer. H. Küttner.
91 Experimental Periosteum Transplants. (*Freie Periostverpflanzung.*) E. Schepelmann.
92 *Fracture of the Radius. A. Troell.
93 *Segment of Carotid Artery Substituted for Segment of Abdominal Aorta. E. Jeger and H. Joseph.
94 *Experimental Production of Gastric and Duodenal Ulcers. W. Gundermann.
95 Fracture (?) of Scaphoid Bone in Children. (Das Köhler'sche Knochenbild des Os naviculare pedis bei Kindern—*keine* Fractur.) A. Köhler and E. O. P. Schultze.
96 Retroperitoneal Hernia. (Die Cooper'sche Hernie.) A. P. Krymow.

82. **After Nephrectomy.**—Kümmell's communication was summarized in the Berlin Letter in The Journal, May 10, p. 1474.

83. **Fractures of the Pelvis.**—Jensen's article was summarized p. 170 of The Journal, Jan. 11, 1913.

85. **Rupture of the Liver.**—In Orth's case the young man hit the region of the liver on the edge of a stone step in a bicycle accident. The rupture was in the lower surface of the left lobe of the liver and jaundice and clay-colored stool indicated injury of the biliary apparatus but there was no special shock. The pulse was full and quiet with a beat of 54 or 58. He refused an operation until intense pain developed forty-eight hours after the accident and the upper abdominal wall became rigid. The pulse kept remarkably slow until the bile and blood—a liter in all—had been removed from the abdominal cavity, when the pulse began to increase and was soon 90. The operative mortality in cases of rupture of the liver has dropped in recent years from 85.7 to 65.54 per cent. Orth tamponed, as this was the simplest and quickest measure possible, the rupture being at a point where suture was out of the question while the tampon prevented hemorrhage later. The temperature did not go over 37.9 and the patient was discharged in two weeks and had regained full earning capacity in three more weeks.

86. ***Treatment of Bone and Joint Tuberculosis.***—Garrè's article was summarized in the Berlin Letter in The Journal, April 26, p. 1312. It is accompanied by eight illustrations.

87. **Penetrating Wounds of the Knee.**—Müller reviews the experiences with thirty-three cases of injury of the knee, including sixteen from a knife, needle, nail, sickle or impalement. In the other cases the knee was crushed. Stab wound of the knee must be treated as already an open wound. The outcome depends on bacterial infection. The course of treatment in his penetrating cases averaged fifty-eight days, ranging from twelve to 193. In twelve stab wounds the joint was movable in five but in the others there was more or less impairment of function. In seventeen crushing injuries three children died, and the others required a course of treatment of from seventy-three to 295 days' duration. Amputation was done in two cases; all the other patients were left with a more or less stiff knee.

88. **Cancer of the Testicles.**—Miyata summarizes twenty-seven cases and says that there was a history of trauma in nearly 50 per cent. The patients were mostly laboring men in the prime of life; in twenty-one the tumor was some form of sarcoma; in one case a carcinoma, in three endothelioma, in one a perithelioma and in another, of a mixed type. The interval after the trauma before the tumor developed was six months, one year, four years and five years in one case each, and eighteen months in three cases. The length of the interval was not known in the others.

89. **Continence after Operations for Rectal Cancer.**—Körbl analyzes the experiences in 204 cases in von Eiselsberg's service at Vienna. The operative mortality was 13.6 per cent, being 3.8 per cent. higher in the sixty-five resection cases than after the 118 amputations. The ultimate outcome however was much better after the resections. There were only fifteen permanent cures in the 118 amputation cases while there were twenty-eight permanently cured of the sixty-five patients treated by resection. This brings to 39 per cent. the total among the 136 patients who lived for three years or more after the operation free from recurrence. Some of the patients are still in good health at an advanced age, 77, 78 or 81. He discusses in detail the outcome in regard to ultimate continence with various technics. The condition is at present satisfactory in nearly 50 per cent. of the patients who had to have an anus made in the sacral region. The results were good with the Gersuny twist in about 75 per cent. of the amputation cases in which this technic was applied, but the best results were obtained when the gut had been kinked around the sacrum. Circular suture gives superior results in respect to continence after resection, but when it cannot be done under favorable circumstances, it is best to refrain from attempting it, and merely suture the anterior circumference, fastening the rear portions of the circumference to the skin to improve conditions before the final step of the operation.

90. **Duodenal Ulcer.**—Küttner's communication was summarized in the Berlin Letter in THE JOURNAL May 3, 1913, p. 1374.

93. **Substitution of Carotid for Abdominal Aorta.**—Jeger and Joseph state that their experiences with fourteen dogs proves that it is feasible to replace a segment of a large artery with a segment of a smaller one from the same animal. One of the dogs is still alive and apparently normal.

94. **Experimental Gastric and Duodenal Ulcer.**—Gundermann succeeded in rapidly inducing ulceration in the stomach and duodenum in the rabbit and dog by means of injuring the liver, shutting off the circulation from a certain part of the liver or inducing degeneration in the liver by other means. His findings sustain the assumption that abnormal functioning of the liver is connected in some way with ulceration in the upper digestive tract.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XVIII, No. 2, pp. 163-306. Last indexed April 12, p. 1193

97 Artificial Abortion Considered from Standpoint of Eugenics. (Lässt sich der künstliche Abortus aus rassehygienischen Gründen motiviren?) H. Bayer.
98 Etiology of Atresia of Female Genital Organs. (Zur Aetiologie der Gynatresien.) F. Kermauner.
99 *Clinical Importance of Date of Infection of the Fetus with Syphilis. J. Trinchese.
100 *Causes of Tardy Hemorrhage after Childbirth. (Zur Aetiologie der Spätblutungen im Wochenbett.) F. A. Loofs.
101 Molluscum Contagiosum. C. Merkel.
102 Advantages of the Deventer-Müller Method of Delivery of the Shoulders. (Was leistet die D.-M.'sche Entwicklung des Schultergürtels?) A. Ziegler.
103 *Schöner's Theory for Predetermination of Sex. (Zur Frage der Vorausbestimmung des Geschlechts beim Menschen.) O. Schöner.

99. **Date of Infection of Fetus with Syphilis.**—Trinchese is convinced that the father does not directly transmit syphilis to the offspring, and that the ovum does not become infected. The infection generally occurs during the last half of the pregnancy; there is no evidence at present to indicate that infection occurs during the first half of the pregnancy although this is possible. He insists further that syphilis in itself does not induce abortion. When syphilitic women have an abortion, other causes than the woman's syphilis must be incriminated. When the fetus becomes infected with syphilis the disease runs a brief acute course as a spirochete sepsis which begins and ends in the uterus. Children born alive with syphilitic symptoms are generally infected shortly before birth and they are usually ripe or nearly so. By vigorous mercurial treatment of the mother it may be possible to save the child. The only hope, however, is when the treatment is begun before the fetus becomes infected. Consequently the mother should be given treatment at once on suspicion of syphilis as soon as the pregnancy is ascertained. It may save the life of her unborn babe even when the treatment is not begun until the pregnancy is half through. But if the fetus is already infected there is no hope of saving it. He describes a number of cases to sustain these assertions and cites various authors—all of these experiences confirming the efficacy of vigorous treatment of the woman, in time, that is, prior to the infection of the fetus. He gives one course between the sixth and eighth week till the middle of the pregnancy, then waits for two or three weeks and begins anew, and then gives a third, milder course which brings the woman to term.

100. **Tardy Hemorrhage after Childbirth.**—In Loofs' three cases the hemorrhage came on the third week or month after an apparently normal childbirth and the women succumbed. After the first profuse hemorrhage, there was a period of a few days or weeks entirely free from bleeding before another gush of blood. One patient had six of these hemorrhages, dying the third month; a false aneurysm was found in the cervical branch of the uterine artery, probably injured during delivery. Veit has reported a similar case of intermittent bleeding, the uterus having been torn during delivery. This was also the case in the third patient whose history is related, a small rupture being found after death. These patients might all have been saved if the cause for the hemorrhage had been discovered in time. Something of the kind should be suspected when a tardy profuse hemorrhage is followed by a period without any bleeding, during which the patient recuperates and feels quite well; then suddenly comes another profuse hemorrhage—a sign of aneurysm bleeding, and hence a signal for prompt operative measures. Conservative treatment has absolutely no chance for success and exposes to serious danger. Even suturing the rupture is not enough. The uterus should be removed without delay as soon as the bleeding returns and warns of the true nature of the hemorrhage. The intermission is only a treacherous truce.

103. **Predetermination of Sex.**—Some literature on this subject was listed in THE JOURNAL, Feb. 15, 1913, p. 539, and Schöner's theory was described April 20, 1912, p. 1220.

Berliner klinische Wochenschrift

May 26, L, No. 21, pp. 953-1000

104 *Surgery of the Upper Air Passages and Esophagus. T. Gluck.
105 Anemic Conditions with Chronic Gastric Achylia. K. Faber.
106 *Paralysis from Arsenic in Salvarsan and Neosalvarsan. (Ueber Arsenlähmungen.) R. Obermiller.
107 Determination of Epinephrin Content in the Blood. (Zur Adrenalinbestimmung im Blut.) L. Adler.
108 The Newspapers and Psychiatry. (Psychiatrie und Presse.) W. Vorkastner.

104. **Surgery of the Upper Air Passages and Esophagus.**—Gluck relates how the idea of prophylactic resection of the trachea occurred to him in 1877 and met with ridicule, but later he worked it out into a feasible method and it is now widely applied, suturing the trachea to the incision in the skin and thus providing for undisturbed respiration during operations on the throat and mouth above. In his 160 cases of removal of the entire larynx, he has had no mortality in the last series of 63 cases. In the 132 operated on before 1911 24 patients were free from recurrence for from four to fifteen and 21 others for three years. He has resected the pharynx in 84 cases; the mortality was 25 per cent., but there were only 2 deaths in the last 24 operations, showing progress even in this severe operation. In his 47 cases of transverse resection of the pharynx, he had only 5 deaths. In his 48 cases of hemilaryngectomy there were 3 deaths in the first 28 cases, but none in the last 20. He has done the laryngofissure operation for carcinoma in 42 cases with no mortality in the last 35, and recurrence in only 2 instances and one patient in this latter group was permanently cured by a second operation. The functional results are surprisingly good in many cases. In one of his patients, a man of 47, a new vocal cord has developed and the man can speak without effort. Many patients have a normal voice, others are a little hoarse. When the entire larynx has to be removed with the epiglottis, he provides the patient with an artificial contrivance which enables him to speak. Four bellows and a metal air reservoir are worn in a small wooden box fastened to the belt, with a rubber tube connected with a metal olive with clamp which grasps the septum of the patient's nose. A rubber tube is continued from the olive down behind the uvula. The patient works the bellows by turning a crank and makes the motions of talking and the air from the tube in the throat supplies the voice, which is distinct and without effort. He thinks that this little apparatus is destined to prove useful in case of aphonia and also after operations which render it wise to refrain from the use of the natural voice. He is now experimenting with an electric contrivance for the same purpose and states that he thinks he has succeeded in interesting Edison in the matter.

106. **Arsenic Paralysis.**—Obermiller insists that the symptoms of arsenic poisoning and those called the by-effects of salvarsan are identical, and he here presents further evidence to sustain the identity of arsenic and salvarsan paraplegias. He has been making a special study of paralysis from arsenic poisoning and compares seventy articles on the subject. All testify, he says, to the fact that with arsenic paralysis there is always degeneration in the peripheral nerves and spinal cord. The typical degeneration, the noninflammatory changes, in the spinal cord characteristic of

arsenic poisoning, were found in Wolff-Mülzer's recent case of salvarsan poisoning. This supplies the last link in the chain of evidence for the purely arsenic-toxic nature of salvarsan paraplegias. The lack of regularity in the development of the disturbances shows that the toxic action varies with the individual and constitutional condition of the patient.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

May 23, XVI, Nos. 5-6, pp. 511-630

109 *Tubercle Bacilli in the Blood-Stream. (Vorkommen von Tuberkelbazillen im Blut.) Baemeister.
110 *Increasing Tendency to Conservative Treatment of Bone and Joint Tuberculosis. (Moderne Bestrebungen einer konservativen Behandlung der chirurgischen Tuberkulose.) O. Rothschild.
111 *Gall-Stones and Gall-Bladder Disease in Children. (Cholelithiasis und Cholecystitis im Kindesalter und ihre Behandlung.) A. v. Khautz.
112 Relation of Mikulicz' Disease to Pseudoleukemia. W. Fromowicz.
113 *Cancer of the Prostate. H. Gebele.
114 Congenital Contraction of the Little Finger. (Angeborene familiäre Kontraktur der Gelenke des kleinen Fingers.) E. Schultze.

109. **Tubercle Bacilli in the Blood Stream.**—Baemeister has found forty-two articles on this subject in recent literature and warns that the acid-fast bodies found in the blood on application of the Stäubli-Schnitter technic may be tubercle *bacilli and again they may not.* Skepticism is certainly justified by the lack of concordance between the findings in the smears and the inoculation of animals, and the great difference between the results obtained by various workers. The research in this line, however, has demonstrated that virulent tubercle bacilli may be found in the blood after the diagnostic injection of tuberculin, when they had been absent before. He has reported four cases in man and Rabinowitsch confirmed these findings by positive experimental research. These findings sustain what Virchow and Orth always maintained in regard to the artificial mobilization of the tubercle bacilli by injections of tuberculin; Robert Koch always vigorously combated this assumption.

110. **Conservative Treatment of Surgical Tuberculosis.**—Rothschild shows by his review of 170 articles on surgical tuberculosis how surgery is being driven out of this field by heliotherapy, the roentgen rays and tuberculin. The first of these is constantly winning more adherents and being applied on a wider scale. The experiences with 700 patients of this class at Rollier's sanatorium in the Swiss mountains have been so lauded by medical visitors that it is impossible to doubt any longer that the direct sunlight has a specific curative action on tuberculous tissue. The brilliant results obtained both in regard to function and lack of disfigurement are beyond anything yet realized otherwise. The method has only one drawback, namely, the extremely long period required for its application. Next in importance comes roentgenotherapy, which does not require such a long course and which can be applied anywhere. Everything seems to promise that it has a great future. At the same time it is necessary to accumulate much more experience and apply the method by uniform standards of procedure before a decisive judgment is possible. It has been much to the advantage of heliotherapy that so much material has been accumulated by Rollier under uniform conditions, thus permitting much better estimation of the results. The reports are too conflicting to date for a final judgment on the value of tuberculin treatment, but even now it can be counted on as a valuable aid, especially to supplement operative measures.

111. **Gall-Stones in Children.**—Khautz has been able to find only fifteen cases of gall-stones in children; in five between 5 and 10; in four between 13 and 17, and one new-born child; in five cases the gall-stone was an autopsy surprise. The symptoms are the same as with adults, but when there is no jaundice or swelling of the gall-bladder differentiation is difficult. In two cases the stones were passed in the stool during a purge; operative treatment was given to six of the children, the gall-bladder being removed in five; all recovered. Pure cholecystitis without stones is still rarer. *One boy of 9 had colon bacilli in the turbid bile* with acute cholecystitis; he was operated on the fortieth hour. A girl of 13 had sterile bile in the gall-bladder, which was not much *enlarged; there was evidently cholangitis with slight* cholecystitis. One boy of 5 had 250 c.c. of sterile bile in the inflamed gall-bladder, but no stones, in the course of scarlet fever. A boy of 13 was *treated for acute empyema* of the gall-bladder three weeks after operation for appendicitis. *In* another case an abscess around the gall-bladder occurred in a boy of 10 with typhoid fever; meningitis developed the tenth day of the typhoid and the boy died with signs of pneumonia. Two perforations were found in the gall-bladder, but no stones.

113. **Cancer of the Prostate.**—Gebele concludes from his study of 134 articles that there is no hope for an early clinical diagnosis of cancer of the prostate; every hard, large prostate is liable to be cancerous. There are a few cases of recovery after removal of the growth and these justify some hope from operative treatment, especially when the prostate is removed by a suprapubic operation and it is only partially involved, the cancer more in the center, the prostate smooth, not hard throughout, and the rectal muscles movable.

Deutsches Archiv für klinische Medizin, Leipsic

CX, Nos. 5-6, pp. 413-607. Last indexed May 31, p. 1749

115 Hemolytic Anemia from Fragility of Red Corpuscles and Other Causes. (Zur Klinik hämolytischer Anämien mit herabgesetzter osmotischer Erythrocytenresistenz.) F. Gaisböck.
116 Influence of Large Doses of Calcium on the Calcium Balance. (Zur Lehre des Kalkstoffwechsels. II.) N. Voorhoeve.
117 Mechanism of Development of Peptic Ulcers. (Zur Frage über *das Zustandekommen des peptischen Magen- und Duodenalgeschwürs.)* G. B. Gruber.
118 How High is the Dextrose:Nitrogen Quotient in Severest Diabetes? N. B. Foster (New York).
119 Dropped Beats. (Klinische Untersuchungen über das Aussetzen des Pulses bei tiefer Atmung—P. inspiratione intermittens—und bei forcierter Muskelaktion.) F. Gaisböck.
120 The Pigments of the Blood-Serum. (Die Farbstoffe des Blutserums.) A. A. H. v. d. Bergh and J. Snapper.
121 *Action of Opium on Human Gastro-Intestinal Tract. (Wirkung des Opiums auf den menschlichen Magen-Darmkanal.) A. Mahlo.
122 The Metabolism in Lymphatic Leukemia during Radiotherapy. (Untersuchungen über den Stoffwechsel bei der lymphatischen Leukämie während der Röntgenbestrahlung.) G. Cavina.

121. **Effect of Opium on the Human Intestinal Tract.**—Mahlo determined by means of x-ray pictures the effect of *opium on the intestinal tract. Its greatest influence was on* the large intestine, retarding the functioning so that the food remained in the intestine from twenty-four to thirty-three hours. The effect on the small intestine was also considerable, its action being delayed from five to eight hours. The action on the stomach was more inconstant. The motility was not markedly decreased except in one case. The peristaltic motion was first stimulated and then depressed. The sphincter of the pylorus was contracted and the muscle tone so depressed that dilatation, particularly of the fundus, took place. Opium seemed to have a more intense effect on the intestine when it was used in conjunction with castor oil.

Deutsche medizinische Wochenschrift, Berlin

May 22, XXXIX, No. 21, pp. 977-1024

123 *Vaccination against Diphtheria. (Dritte Mitteilung über v. Behrings neues *Diphtherieschutzmittel.)* W. Zangemeister. (Anhang.) E. v. Behring.
124 Bacteriology of Intestinal Disease in Infants. (Bakteriologische Untersuchungen bei darmkranken Säuglingen.) E. Gildemeister and K. Baerthlein.
125 Histologic Research on Central Nervous System of Syphilized Rabbits. G. Steiner.
126 *Severe Chronic Colitis. T. Rosenheim.
127 Cholesterin Content of Bile during Pregnancy. (Zur Frage des Cholestearingehalts der Galle während der Schwangerschaft.) J. W. McNee and L. Aschoff.
128 *Traumatic Thrombosis in the Axillary and Subclavian Veins. H. L. Baum.
129 Connection between Tabes and Psychic Derangement. (Behandlung der Tabes, speciell ihrer rudimentären Form, und deren Beziehungen zu psychopathischen Störungen.) Nochte.
130 *Advertising of Medicinal Articles. (Beschränkung der medizinischen Fachpresse in der Veröffentlichung von Heilmit*telinseraten.)* J. Schwalbe.

125. **Vaccination against Diphtheria.**—This is the third of the reports on which von Behring based his communication in regard to his method for durable immunization against diphtheria. Behring supplements it with a discussion of the dosage. He insists that the susceptibility to a drug or therapeutic serum is not a haphazard matter of individual response but is subject to laws, almost mathematical in their precision. We know that guinea-pigs of a certain weight respond in a certain way to a given dose of diphtheria toxin, and that if the bulk of the animal is increased by a tumor or the animal is gravid, it becomes less susceptible to the toxin proportionally to this increased weight. He is confident that there is for man and the domestic animals a similar normal standard of susceptibility which we may yet discover and thus be able to apply the exact dosage needed.

Zangemeister reports tests on parturients and new-born babes which apparently demonstrate that treatment of pregnant women may confer immunity on the child, and further that new-born babes bear the treatment without harm. They require to induce a reaction several times the dose needed for an adult who has never had diphtheria; adults who have had diphtheria react to a smaller dose. (See Berlin Letter, June 14, p. 1896.)

126. **Severe Chronic Colitis.**—Rosenheim has made a special study of fifteen cases of extremely severe protracted colitis not connected with tuberculosis or dysentery; three of the patients died. He has never had really gratifying results from operative treatment except in one instance. These patients were all of the delicate, nervous type; the nervous system evidently has a great influence on the course of the affection, so that he regards general measures that improve the blood and tone up the nervous system as the most important factors in treatment, supplemented by measures to relieve pain and permit the patients to sleep. The trouble is merely a simple catarrhal-inflammatory process in the colon, but there seems to be some special weakness of the colon walls which predisposes to auto-infection and auto-intoxication in abnormal degree. Repose of body and mind is generally indispensable, kept up for weeks. If the stomach and small intestines are sound, the diet should be bland, mostly vegetable. But if the stomach and small intestine are diseased, the diet must be arranged to ensure that the chyme is properly prepared above for the colon. In one case with much fever, benefit was realized from a vigorous course of calomel, but only in this one case; still it might be tried when secondary infection seems evident. He never saw any improvement from rectal insufflation of a powder; better results followed medicated enemas of starch, gelatin or acacia. The chief lesson taught by his experience is that in an anemic or nervous person any even mild catarrhal intestinal affection should be given thorough and persevering treatment with special care until it is entirely cured.

In three of his cases here reported in full internal measures had failed and the general health and local conditions were growing constantly worse. The patients were two women of 25 and 40 and a man of 24. In the latter case there was complicating multiple neuritis and functional derangement of the small intestine, occasional fever and extreme emaciation. Appendicostomy was then done to permit local treatment, and gradual improvement followed, all traces of the neuritis disappearing by the end of six months. The appendicostomy evidently saved the young man's life but he is still far from well. The other patients were given local treatment through a fistula into the cecum and gradual improvement followed but not enough to permit closing up the fistula. In two other cases the operation came too late to save the patients, a man of 39 and a woman of 27, and a third man of 34 died from sepsis before an operation was undertaken.

In one case the colon was found entirely normal a year after recovery under medical measures alone; the very severe colitis had recurred a few times in the course of three years. The young man succumbed finally to diffuse peritonitis which Rosenheim ascribes to some small focus of infection left from the old colitis, possibly in a diverticulum. In another case with signs of severe colitis for several months, complete recovery followed and the patient has been in good health for two and a half years. Complete subsidence of all symptoms was also realized in the case of a boy of 8 who had long had obstinate fever from his severe colitis.

128. **Traumatic Thrombosis.**—Embolism has been known to follow traumatic thrombosis in only one case to date, but the thrombosis is liable to cause persisting disturbance in the local circulation and interfere with the earning capacity when in the arm. The thrombosis is liable to be malinterpreted and the symptoms be ascribed to neuritis or an inflammatory process in the muscle. The trauma is generally sudden but indirect, so that there is nothing to draw the attention to the injured vein, especially as the accident in the seven cases on record was a trivial one, such as throwing a ball or holding in an unruly horse. Baum adds another case to the list, a woman of 54 who had to carry a heavy valise as she changed cars several times on a journey. Her right arm, shoulder and breast became painful and swollen but improved under rest and rubbing. Whenever she started to use the arm again the severe symptoms returned, and the arm was weak, the skin slightly cyanotic and marbled. Now, a year and a half later, during which time the arm has been spared and lightly massaged, it is only slightly swollen and there is no pain but only a tendency to paresthesias and a sensation of fatigue and heaviness in the arm after exertion. At the same time conditions have improved so that the woman is able to write letters. The ultimate outcome usually depends on the development of a collateral venous circulation, and treatment should aim to promote this by rest and cautious massage after the fourth week.

130. **The Advertising of Medicinal Articles.**—In Germany the police regulations allow certain drugs, like aconite and cocain, to be dispensed only on a prescription, and they are not permitted to be advertised to the public. Recently some unknown person officially denounced to the authorities certain leading medical journals for carrying advertisements of drugs the public advertising of which is forbidden. A number of the journals were summoned before the courts and in one case the editor was put on trial, but acquitted. In the other case the written explanation sent in by the editor seems to have satisfied the authorities, as no further steps have been taken. A legal opinion on the matter is given here showing the absurdity of regarding advertisements in the medical press as ordinary publicity. It states that physicians combat the advertising of drugs to the public, and hence the medical journals do not want to be read by the public. On the contrary, they strive to keep within an exclusive circle of readers. The fact that a medical journal is occasionally read by outsiders does not affect the case. The law cannot take cognizance of remote eventualities.

Medizinische Klinik, Berlin

May 18, IX, No. 20, pp. 777-816

131 *Dietetic Treatment of Gout. (Diätbehandlung der Gicht.) O. Minkowski.
132 *Effect of Mountain Climate on Man. (Wirkung des Höhenklimas auf den Menschen.) O. Cohnheim.
133 *Importance of Examination of the Blood in Lead Poisoninig. (Wert der Blutuntersuchung bei Bleivergiftung.) J. Schoenfeld.
134 Influence of Tuberculous Taint on Development of Children. (Einfluss der verschiedenen Grade der erblich-tuberkulösen Belastung auf die allgemeine Körperbeschaffenheit der Volksschulkinder.) Peters.
135 *Flour and Potato Courses in Diabetic Diet. (Ueber Mehlkuren und Kartoffelkuren bei Diabetes.) W. Wolff.
136 Behavior of the Blood at Moderate Altitudes. (Verhalten des Blutdruckes im Mittelgebirge.) Siebelt.
137 Phenomena of Mutation of Bacteria. E. Toenießen.

131. **Dietetic Treatment of Gout.**—Minkowski warns that recent research has demonstrated that uric acid can be found in the blood in normal conditions, even on a diet free from purins. The mere discovery of uric acid in the blood on a purin-free diet does not necessarily mean gout. The proportion is much larger in those inclined to gout. This accumulation of uric acid is not due to simple exaggeration of the

production of uric acid; when this occurs there is always a larger uric acid output in the urine. In gout the urine does not contain an abnormal proportion of uric acid and it seems as if the endogenous production of uric acid was rather below normal than above. The trouble seems to be retention, and the question is why the abnormally large proportion of uric acid in the blood is not passed out through the kidneys. The kidneys seem to become *impermeable for uric acid alone*: gout is not uremia. The assumption seems inevitable that either the uric acid itself has become modified in its physical or chemical properties, or else certain metabolic processes which govern the fate of the uric acid have become modified—the trouble does not seem to be in the kidneys themselves. Treatment should therefore aim to reduce all the mtabolic processes in general to a lower plane, and thus in this way act attenuatingly on the metabolic process assumed to be responsible for the gout. This should be supplemented by excluding from the diet the purin bodies which have been recognized as the source of gout. (His remarks on the diet in gout were summarized in the Berlin Letter in THE JOURNAL May 31, p. 1720.—His statement that a liter of beer contains as much purin bodies as 100 gm. of meat refers to Bavarian beer.) He says that the purins in coffee, tea and cocoa are in a methyl compound which does not become transformed into uric acid. These beverages may at most increase transiently the uric acid content of the urine by their diuretic action, thus sweeping out a certain amount of the previously retained uric acid. There is no reason for prohibiting these beverages in gout solely from the standpoint of uric acid. Boiled meat contains less purin bodies than roast, but fish does not differ materially from meat in general in this respect. Small fish contain more purins than beef and pork. In conclusion he calls attention to the fact that proteins form what may be called an acid diet, that is, anions (sulphuric acid and phosphoric acid) are generated among the resulting products, while vegetables constitute more an alkaline, a kation, diet, and these facts are not without influence in the management of gout.

132. See Berlin Letter, May 17, 1913, p. 1554.

133. **Examination of the Blood in Diagnosis and Control of Lead Poisoning.**—Schoenfeld has been making a special study of this subject, examining 556 persons with actual or suspected lead poisoning. He found no signs of the line on the gums in forty-four of 126 with unmistakable lead poisoning. and it was distinct in only forty-eight. It was never found in persons without teeth. The hemoglobin averaged 62 per cent. in women and 86 per cent. in men, but the most characteristic finding was the basophil granulation in the red corpuscles and the change in tint of these basophil substances under the action of certain stains. The basophil granulation and metachromasia may occur in other conditions, but in none in which there can be any confusion with lead poisoning. The workmen most exposed to the danger of lead poisoning—according to his experience—were (1) those in the powder rooms of lithographing works, (2) type founders, (3) dyers, (4) painters, (5) plating works, (6) file grinders, stereotypers, etc., and, eighth on the list, typesetters. Typesetters know the dangers to which they are exposed and apply to a physician at once at *the first sign of trouble*. Examination of the blood is peculiarly useful in these cases as when it shows normal conditions the "lead hysteria" patient can be reassured that his symptoms are not due to lead poisoning. The blood findings are also useful to control the progress toward recovery; in eighteen of forty patients thus kept under supervision the blood returned to normal after the patients had changed to some other occupation. The blood findings show whether patients are under the influence of plumbism or not, and permit appropriate treatment without loss of an hour while with negative findings the patient can be reassured.

135. **Diet in Diabetes.**—Wolff regards the oatmeal diet as a great advance in the dietetic management of diabetes as time has revealed that *the benefit is not from the oatmeal* especially but that practically any gruel has the same effect. He gives the details of five cases, in some of which he found a potato gruel very beneficial. By the use of various gruels, *Mehlsuppen*, it is possible to vary the diet palatably, especially when inulin is added or interposed. The soup form of the food is of great importance as also the advisability of preceding the flour soup with vegetable days for reasons which he enumerates. In the case of a woman of 42 with glycosuria for six years, on abstention from meat the sugar in the urine dropped from 14.3 to zero; then on 150 gm. oatmeal twice, the three following days 3.8, 10.5 and 5.8 gm. of sugar appeared in the urine, with traces of acetone. Then two equivalent amounts of wheat flour were given and the sugar and acidosis disappeared, but returned again after two oatmeal days, and the sugar kept at about 5 gm. notwithstanding the strictest abstention. *Then equivalent amounts of a potato-flour soup* were given and the sugar ran up from 6.5 to 19 gm. the first day and then dropped back to below the first figure, and by the fourth day the urine was entirely free from sugar. In two other severe cases oatmeal and inulin seemed to be borne better than the potato soup. He relates the details of dietetic treatment along these lines in four other cases to sustain his views.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

May, XXXVII, No. 5, pp. 554-722

138 *Radiotherapy in Gynecology, Especially for Carcinoma of the Uterus. A. Döderlein.
139 *Heart Disease and Pregnancy. Fellner.
140 Peroneus Paralysis Following Delivery. C. Staude.
141 Vaccine Treatment of Gonorrhea in Women and Girls. H. Heymann and Moos.
142 Tardy Ileus after Vaginal Hysterectomy. A. Schütze.

138. **Efficacy of Radiotherapy in Gynecology, Especially for Carcinoma of the Uterus.**—Döderlein uses the technic advocated by Krönig, Gauss and Limbecke and to it attributes a great measure of his success. He reports thirty-two cases of myoma and hemorrhage with prompt and permanent benefit under radiotherapy and without any bad effects. The tumors entirely disappeared in many cases. More surprising still, he found a combination of Roentgen ray and mesothorium treatment effective in many cases of uterine cancer. Six cases are described and reproductions given of the microscopic picture before and after treatment. He thinks the rays had a direct effect on the carcinoma cells and not, as has been previously held, that the cancer cells were affected secondarily by contraction of the surrounding connective tissue. He also reports eight cases of unsuccessful treatment in cancers which had returned after operation.

139. **Heart Disease and Pregnancy.**—Fellner concludes on the basis of about 250 cases that heart disease is not an extremely dangerous complication of pregnancy. Its danger depends more on the condition of the heart muscle than on that of the valves. It is the birth that is to be feared, not the pregnancy itself, and abortion should be performed in cases where the mother has shown dangerous heart symptoms in previous labors. Also in heart disease complicated by tuberculosis, goiter or nephritis. Mitral stenosis demands active intervention also. The patients' circumstances should be taken into account in considering sterilization; working women cannot spare their hearts during pregnancy and should therefore be *sterilized more readily* than the well-to-do. Vaginal cesarean section was found a satisfactory procedure in a number of cases. Heart disease seems to be a frequent cause of menorrhagia.

Münchener medizinische Wochenschrift

May 20, LX, No. 20, pp. 1073-1128

143 *Elective Cultivation of Diphtheria Bacilli. (Ein neues Prinzip der elektiven Züchtung und seine Anwendung bei Diphtherie.) H. Conradi
144 Chemotherapy of Spirochete Disease. (Zur Chemotherapie der Spirochätosen.) G. Giemsa.
145 Local Thorium Treatment of Experimental Cancer. (Therapeutische Versuche mit *lokaler* Thoriumchloridbehandlung bei Karzinommäusen und Sarkomratten.) A. Caan.
146 *Direct Sunlight in Treatment of Bone and Joint Tuberculosis. (Lichtbehandlung der chirurgischen Tuberkulose.) O. Vulpius.
147 *Technic for Quantitative Determination of Urates in Blood Serum. Ziegler.

148 *Serodiagnosis of Pregnancy. (Zur biologischen Diagnose der Schwangerschaft.) B. Stange.
149 Differentiation of Convulsions by Blood Picture. (Die differentialdiagnostische Abgrenzung einiger Krampfformen durch das Blutbild.) P. Jödicke.
150 Infusion or Injection of Salvarsan. F. Zimmern.
151 *Comparative Thermometer Findings. (Vergleichende Temperaturmessungen und deren klinische Bewertung.) C. Stäubli. Commenced in No. 19.

143. **Improved Technic for Elective Cultivation of Bacteria.**—Certain bacteria seem to be attracted by hydrocarbons and cling to them and Conradi has utilized this property to sift out diphtheria bacteria as they float upward in a suspension and cling to a supernatant layer of benzin. Only those bacteria seem to be attracted in this way which have a fatty envelop. but this includes the important pathogenic types. A greased needle will rise to the surface of water and float. A loop of an agar culture of staphylococci and hay bacilli and a loop of diphtheria bacilli from a tellurium plate are placed in a test-tube which is then filled up with 10 c.c. of salt solution plus 2 c.c. of benzin. The tube is then plugged and well shaken and set aside for five minutes. On the lower surface of the benzin will then be seen grayish masses and flakes formed exclusively of diphtheria bacilli. the other bacteria still floating suspended in the fluid below. To differentiate diphtheria a swab from the throat is placed in a tube which is then filled with 10 c.c. of salt solution; 2 c.c. of benzin is poured on top and the whole well stoppered and shaken. The bacilli are taken from the benzin with a toothpick wound with cotton. The cotton is protected with a disk of filter paper. and cotton and filter paper are fastened to the stick with fine wire. When ready to use, the lower end of the stick is dipped into oil and then it is lowered into the benzin; at once the cotton sucks up all the benzin while the oiled disk does not take up any water or bacteria from the fluid below. The oil stick is thus a trap to take up the diphtheria bacteria with the benzin and leave the others untouched. The stick is then rolled back and forth on a tellurium plate until the plate is inoculated thoroughly with the bacteria. Conradi has found this method superior to all others he has tried for sifting out pure cultures of bacteria.

146. **Light Treatment of Bone and Joint Tuberculosis.**—Vulpius' experience seems to have demonstrated that practically as fine results can be obtained with exposures to the arc light or mercury lamp as to the direct sunlight, and at sea level as in the mountains. He reports surprisingly complete cures in numbers of cases, even in those which had resisted all other treatment for months and years. The pain and swelling subside, the suppuration dries up. and the lesion heals over while the stiff joint regains unhoped for movability. He mentions four sanatoriums in Germany, including his own near Heidelberg, where these principles are being applied in treatment of surgical tuberculosis without the necessity of an expensive trip and long sojourn far from home.

147. **Quantitative Determination of Urates in the Serum.**—Ziegler says that the technic he describes does away with the disadvantages of other methods, especially the disturbing residual nitrogen and the loss of some of the uric acid as it is absorbed into the coagulated albumin. His technic is based on the same principle as the Krüger-Schmidt method, namely, that copper sulphate forms an insoluble compound with uric acid and urates. This occurs, with complete precipitation of the urates, even when enough sodium hydroxid has been added to the fluid to keep the albumin in the serum from precipitating as the mixture is boiled and evaporated down to a third of its bulk. It is then centrifuged until the fluid is limpid; the sediment deposit is then treated with sulphuric acid which dissolves at once the copper urate compound and the amount of uric acid thus liberated is titrated with potassium permanganate. The test reveals down to 0.005 or 0.025 c.c. uric acid in 10 c.c. of serum.

148. **Serodiagnosis of Pregnancy.**—Stange states that positive findings were obtained in 100 per cent. of the seventy-three pregnant women tested with Abderhalden's technic.

151. **Comparative Temperature Measurements.**—The first part of Stäubli's article was summarized in abstract 47, p. 2070, last week. He has found that not only the tuberculous but persons with asthma and convalescing from wasting diseases as also the obese, the anemic and the neuropathic, are all liable to an unstable temperature in the rectum. A rise in the rectal temperature can be regarded as subfebrile only when it is accompanied by a rise in the temperature in the axilla. His research seems to show that the temperature in the rectum is dependent on the neighboring internal organs and the production of heat in the muscles. while the temperature in the axilla is the manifestation more of the heat-regulating processes.

Petersburger medizinische Zeitschrift

May 14, XXXVIII, No. 9, pp. 103-111

152 Disease of Accessory Nasal Sinuses. (Ueber Nebenhöhlenerkrankungen der Nase.) v. Rimscha.
153 Bulbar Paralysis. (Zur Kasuistik der bulbaren Erkrankungen.) H. Siebert.

Wiener klinische Wochenschrift, Vienna

May 15, XXVI, No. 20, pp. 781-824

154 Cultivation of Human Tumor Tissue outside of the Organism. (Zur künstlichen Kultur menschlicher Tumoren.) P. Albrecht and G. Joannovics.
155 Anaphylaxis. (Zur Frage der anaphylaktischen Vergiftung.) R. Kraus and P. Kirschbaum.
156 Avian Tuberculosis in Man. (Vorkommen von Geflügel-Tuberkulose beim Menschen.) E. Löwenstein.
157. Small-Pox and Typhus in Bosnian Refugees. (Variola- und Flecktyphusstudien an den bosnischen Rückwanderen aus dem Balkan.) L. Arzt and W. Kerl.

Zentralblatt für Chirurgie, Leipsic

May 24, XL, No. 21, pp. 809-848

158 *Application of Extension to Fracture of the Heel and Middle Portion of the Foot. (Extensionsbehandlung bei Calcaneusfraktur und den Verletzungen der Mittelfussknochen.) Gelinsky.
159 *Operative Treatment of Paralyzed Feet. (Zur Operation gelähmter Füsse.) E. Müller.
160 *Phenol-Camphor in Joint Disease and Cold Abscesses. (Ueber Phenolkampferbehandlung verschiedener, auch tuberkulöser Gelenkerkrankungen und kalter Abszesse.) F. Pohl.

May 31, No. 22, pp. 849-896

161 Blocking the Brachial Plexus. (Zur Anästhesierung des P. brachialis.) D. Kulenkampff.
162 The Phrenic Nerve from Clinical and Surgical Standpoints. F. Oehlecker.
163 Fascia Flap to Close Fistula into Stomach. (Operative Verengerung der Magenfistel mittels freier Fascienplastik.) V. v. Hacker.

158. **Application of Extension to Fracture of the Heel and Middle Part of the Foot.**—Gelinsky gives an illustrated description of the technic which he has applied with great success, reporting a typical case in detail.

159. **Operative Treatment of Paralyzed Feet.** — Müller describes his technic for operating on a paralyzed pes calcaneus and also for making an arthrodesis in the talotarsal joint with paralysis of the muscles.

160. **Phenol-Camphor in Treatment of Cold Abscesses, Etc.**—Pohl's experience has amply confirmed, he says, the statements of those who called attention to the way in which camphor seems to annul the corroding action of phenol. He used it in the formula 30 parts phenol, 60 parts triturated camphor and 10 parts alcohol, injecting this mixture directly into the lesion in cases of old rebellious effusions and destructive inflammatory processes in joints, and recurring rheumatic joint affections displaying a tendency to develop into arthritis deformans. In the course of the three years since he has been doing this he has even come to use this treatment for acute suppurative processes in joints and for articular rheumatism. The results were always strikingly good except that general sepsis did not seem to be influenced by the injections. He has had only two cases of this latter type; one patient died. In both cases the temperature dropped decidedly after the phenol-camphor injections. He has given the injections at intervals of two, four or eight days to a number of patients, never going above the dose of 2 up to 5 c.c., and except for slight carboluria has never witnessed any by-effects. There does not seem to be any reaction in a sound joint, but an inflamed joint swells and may become very painful, requiring

application of ice or aluminum acetate; sometimes it may be necessary to draw off some of the effusion. The second injection induces merely a slight reaction, and the third scarcely any at all. The reaction is the more pronounced in the chronic cases. He calls attention in particular to a case of tuberculous caries of the ribs in which, after nearly a month's treatment with iodoform-glycerin, the process seemed on the point of breaking through. After three injections of the phenol-camphor and aspiration of the exudate, the process retrogressed and there was no visible evidence of its presence two weeks later.

Zentralblatt für Gynäkologie, Leipsic

May 24, XXXVII, No. 21, pp. 757-796

164 *Cesarean Section in Russia. N. Pobedinsky.
165 Care of Stump of Umbilical Cord. (Einfache chirurgische Versorgung des Nabelschnurrestes.) B. Nardory.

May 31, No. 22, pp. 797-836

166 Tendency to Uterine Hemorrhage Arrested by Radium Emanations. E. Opitz.
167 Apparently Normal Delivery with Total Paralysis of the Trunk from Spinal Tumor near Atlas. J. Schottlaender.

164. **Cesarean Section in Russia.**—Pobedinsky states that up to 1885 only three instances are on record of recovery of the woman after cesarean section in Russia. Since then the operation has been done in 446 cases; in the decade before 1900 the mortality was 6 per cent., and since then 6.6 per cent. of the 288 patients treated by the classic technic. It was applied three times on three women, one of whom succumbed at last, and twice on thirty-two. The operation was done in thirty-nine cases because the diameter of the pelvis was 6 cm. or below, and in 222 cases less than 8 cm. Cesarean section is generally done as a prophylactic measure, when the pelvis is too contracted for hope of normal delivery; thus before labor has set in.

Policlinico, Rome

May 25, XX, No. 21, pp. 733-768

168 No Influence Apparent from Preventive Serum Enema on the Symptoms of Anaphylaxis. (Il valore del clistere preventivo sui sintomi d'anafilassi.) G. Lagana.

Riforma Medica, Naples

May 10, XXIX, No. 19, pp. 505-532

169 *Test for Hyperchlorhydria. (Osservazioni sopra una reazione personale atta a dimostrare un eccesso di HCl nel succo gastrico.) A. Cipollina.

May 17, No. 20, pp. 533-560

170 Operative Cure of Abscess in Lung during Typhoid. (Ascesso polmonare sopravenuto lungo il decorso di ileo-tifo.) D. Giordano.
171 Kala-Azar at Rome. (Nota clinica su alcuni recenti casi di leishmaniosi interna.) G. Spagnolio.
172 Anatomic Changes Induced by Intramuscular Injection of Salvarsan. B. D. Favera. Commenced in No. 19.
173 Chloroform or Ether? C. Salvetti. Commenced in No. 16.

169. **Color Test for Hyperchlorhydria.**—Cippolina's hypochlorite test was described in The Journal Sept. 21, 1912, p. 978. His further experience, he says, has confirmed the reliability and sensitiveness of the technic. It is particularly useful from the fact that the color reaction occurs with different acids only at different concentrations, and thus each acid can be tested for separately in the same test-fluid.

Hygiea, Stockholm

April, LXXV, No. 4, pp. 321-416

174 *Gastric Ulcer (Några ord om diagnosen och terapien vid ulcus ventriculi.) K. Petren.
175 *Mercury in Air in Scientific Institutions, etc. A. Blomquist.
176 The Appendix in Hernia. (Några ord om appendix och appendicit i bråcksäck samt appendectomi vid radikaloperation af ljamsk--och kruralbråck.) L. Norrlin.
177 Bile Peritonitis without Perforation of Bile Passages. (Om gallperitonit utan perforation af gallblåsa eller gallvägar.) S. Johansson.

174. **Gastric Ulcer.**—Petren has been impressed with what he calls the discontinuousness of the symptoms in his hundred cases of gastric ulcer during the last two years. He knows of no other stomach affection with periods of absolute freedom from all disturbances on the part of the stomach, these symptomless periods sometimes longer than those with symptoms. With chronic gastric catarrh there are frequently periods of more or less remission of symptoms but never with the absolute vanishing of all symptoms, as with ulcer. The connection between the pains and the presence of food in the stomach and the complete cessation of the pain when the patient vomits, are also characteristic for ulcer. He regards systematic examination of the stools for invisible blood as indispensable, and he does not allow the patient to get up until the findings are constantly negative. If the Weber test findings are still positive after the third week of treatment, he stops all food for a day and then recommences the dieting course anew from the beginning, hastening a little the progress toward solid food. If then there are still traces of invisible blood in the stools he recommences the course for the third time. If the findings are still positive at its close he advises operative treatment. He does not approve of the methods of dieting in vogue but he has been much pleased with the results of the dietetic technic he has worked out. The patient fasts the first day; is given 172 calories the second; 344 the third; 688 the fourth, up to 1,908 the seventh day, thus reaching a higher total than even with the Lenhartz diet (1,588 calories the seventh day). He restricts the patient at first to cream plus three parts sweet milk (cream with from 15 to 18 per cent. fat content). A spoonful is given every hour the second day; every half hour the third day; two every half hour the fourth day, up to a total of one or two liters as the patient prefers. The second week he allows oatmeal gruel, made with water or milk, and a little butter. The third week he allows eggs and porridge, preferring to give the eggs raw. During the third week if all is going well he gives meat scraped raw and browned. Not until the end of the third week does he allow bread and butter and cooked eggs. Milk and cream do not stimulate gastric secretion while they contain fat. Nutrient enemas may prove useful in exceptional circumstances, especially when cream is used for the enema with addition of pancreas extract to predigest it, and it is given by the drop proctoclysis technic. He gives the tabulated details in regard to the weight before, during and after the course of treatment of ninety-nine patients; among the thirty-seven with invisible blood in the stools, twenty-nine increased in weight and forty among the sixty-two whose stools were always free from blood. The average of the increase was about six pounds, showing that his diet supplies sufficient nourishment. He protests vigorously against permitting food at once after serious gastric hemorrhage. The only drugs he uses are bismuth and extract of belladonna; the latter reduces the irritability of the vagus which he believes has something to do with ulceration in the stomach.

175. **Mercury in the Urine of Persons Handling Mercury.**—Blomquist reports several cases of chronic mercurial poisoning among the research workers and attendants at the scientific institutes connected with Swedish universities. Quite large proportions of mercury were found in the air and dust; the urine of persons who had been there for four years or more showed as much mercury in the urine as if they had taken nine courses of mercurial inunctions, four immediately preceding the examination. He also found mercury in the urine of dentists who had been working with amalgam fillings containing mercury; one dentist had 3.4 mg. to the liter of urine. Blomquist found further large amounts of mercury in the air and dust in the torpedo rooms, etc., of the navy department but there did not seem to be any appreciable intoxication among the individuals working there, probably because the sulphur and other metals currently used there formed harmless combinations with the mercury.

Ugeskrift for Lægér, Copenhagen

May 22, LXXV, No. 21, pp. 869-928

178 Scotoma from Watching Eclipse. (Scotoma helioeclipticum. Forholdene i Danmark under Solformørkelsen 17/4 1912.) K. K. K. Lundsgaard and H. Rønne.
179 Study of Normal Human Blood. (Undersøgelser af normale Menneskers Blod.) V. Bie and P. Møller. Commenced in No. 20.

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POSTERIOR GASTROJEJUNOSTOMY IN ACUTE PERFORATIVE ULCER OF THE STOMACH AND DUODENUM*

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There are but few affections which can be compared with acute perforation of a duodenal or gastric ulcer in respect to the certainty of death without operation, contrasted with almost equal certainty of recovery if the appropriate operation is done in the early hours after perforation. Prompt diagnosis and rational treatment, therefore, are the chief issues, and the necessities of immediate action in the event of perforation demand a condition of preparedness on the part of the physician and surgeon if they are to seize the opportunity of performing the modern miracle of transmuting the very throes of death into life and health.

Perforation of duodenal or gastric ulcers is infrequent, but not so rare that any active physician will fail to encounter one or more instances in the course of his practice, while the active surgeon will see even more. In the last ten years I have had thirty-six cases. It has seemed to me that these have increased in number in the latter part of this period, a circumstance which I refer not to increased frequency of the disease but to more accurate recognition and application of treatment. The cases of fatal "acute indigestion" are diminishing somewhat by the withdrawal of this as one of the important conditions erroneously so-called.

DIAGNOSIS OF PERFORATED ULCER

The diagnosis in the early stages is usually so easy that when it is missed it is the result of inexperience or of being caught off guard. I have been impressed by the accuracy with which my house surgeons have recognized the condition, particularly when the question is fresh in mind by reason of a recent case.

The leading symptom is pain; the leading sign is rigidity; the leading clue is a history of previous indigestion of ulcer type. The pain and the rigidity are invariably present. The suggestive history is occasionally lacking.

The pain of perforation is sudden and violent. There may have been premonitory pains of great severity, but the pain of perforation is agonizing and unbearable. It may come on during exertion or follow the ingestion of food or fluid. It will be described in various terms, but of its intensity there is no question. Its very severity often precludes exact localization by the patient. It is abdominal, not pelvic, midabdominal often, epigastric or hypochondriac often, and in the iliac fossa occasionally, radiating to the back at times, but in general in the early portion of the seizure it is upper abdominal. Sometimes the patient detects a sensation at the moment of rupture as if something had burst in his abdomen. The posture is characteristic. These patients lie on their backs, the thighs flexed, every muscle tense, the facies anxious, and they are disinclined to shift their position.

General rigidity of the abdominal muscles sets in at once after perforation. The rigidity is of the extreme type often called board-like. It is most marked in the upper abdomen. So tense are the muscles that the abdomen is at first retracted, and, at times, a transverse depression is seen at the level of the umbilicus. There is no other condition in which the upper abdominal rigidity is so early and so marked as in perforated ulcer.

Extreme tenderness also is present at once after perforation. At first it is located over the site of perforation, but with the rapid spread of peritonitis, other areas of peritoneum become sensitive to pressure, and a source of difficulty in diagnosis is thereby introduced. In perforated duodenal or pyloric ulcers particularly, the peritoneal irritation spreads rapidly along the paracolic grooves into the right iliac fossa, and when the patient is first seen a few hours after perforation this area may be quite as tender as the epigastrium, thus accounting for a frequent error of diagnosing perforated ulcer as perforative appendicitis.

Were it the physician's privilege to be present at the time of perforation and observe the sequence of development of symptoms and signs, the spread of the peritonitis from above downward could be followed and the diagnosis made correspondingly easier, since appendicular peritonitis can as easily be traced from the iliac fossa to the upper peritoneum. Such an opportunity is rare and we must therefore bear in mind this characteristic rapid spread of peritoneal involvement, when we first see the patient after an interval has elapsed. Pelvic and rectal tenderness supervenes rapidly and may be of assistance in determining the existence of general peritoneal inflammation.

A history of prior abdominal trouble was present in all the cases which have come under my observation, the duration of symptoms ranging from two weeks to fifteen years. The sufferings of the patient dull his memory for details and render the time inopportune for the development of an exact history. Still, at times, from the patient himself, from his physician or from his friends, a satisfactory ulcer history can be obtained. Occasionally, as happened in several instances, no clear history p[illegible] ulcer could be obtained, even by [illegible] very. This history then, when present, is of great assistance, but its absence by no means excludes the diagnosis of perforation.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

This is the practical picture of perforated ulcer. If it is remembered and all the rest forgotten I am convinced that more diagnoses will be made than are made at present. The diagnosis is a feat of clinical observation and deduction based on the great outstanding and individual features of the disease. The attempt to place any other symptom or sign on the same plane of importance with those just mentioned will in individual cases result in disaster. A brief discussion of the subsidiary symptoms and signs will suffice.

Shock at the onset has been observed. In a greater or less degree it is not infrequently associated with the severe pain of perforation. But people are differently constituted in respect to the reaction to pain. Shock may be slight or very transient, and in most patients after a very few hours not even the slightest element of shock can be seen.

Vomiting is almost constant and is a symptom of value. It is not invariably present, however, and is a symptom of such common occurrence in varied general and abdominal disorders that it serves but little purpose in diagnosticating the condition of perforation. Nausea and vomiting may be noted as of almost uniform association of auxiliary, but not distinctive, value. Blood in the vomitus is seldom seen, but when present is decidedly helpful.

The temperature, pulse and respiration rates are very misleading if the attempt is made to attach diagnostic importance to them. Let me cite, without selection, a few of the observations made on the operative cases in this series:

Temperature	Pulse	Respiration
98.3	104	24
99.4	92	24
99.	108	34
97.4	112	32
98.2	78	36
99.	96	28

These observations are fairly illustrative of the temperature, pulse and respiration at times ranging from six to fifteen hours after perforation. It will be seen that the temperature is least affected, not infrequently being normal, but naturally showing a slight tendency toward elevation.

The pulse is, as a rule, moderately accelerated. Again, it may be normal. There is nothing distinctive in its quality, which is frequently full and good.

The respirations are increased slightly as a rule. This is due, more than to any other factor, to the rigidity of the abdominal muscles and the diaphragm, which forces the breathing to assume the true costal type necessitating more frequent respirations for the purpose of aeration. In short, in the remedial stage of perforation there is nothing in the temperature, pulse and respiration to suggest the urgency of the patient's condition. Later, when the patient is getting ready for the pathologist instead of the surgeon, the temperature, pulse and respiration show great changes, a description of which is interesting for the student of the biology of disease but lacking in help to the sufferer.

Distention, the accumulation of fluid in the abdomen and the subsidence of peristalsis, "the silent belly," are also terminal events, of prognostic, but not of diagnostic, importance.

Free gas in the abdominal cavity and the obliteration of liver dulness are also signs which should be stricken out of the text-books or labeled indelibly as false friends. Too much stress has been laid on these signs as indicative of perforation of the bowel. Liver dulness may be diminished or abolished either by gas in the peritoneal cavity or by gas in the intestine, but in either case it requires a large amount of gas to produce this effect. If the gas is in the intestine it requires marked distention, which, in the case of perforated ulcer, can come about only when peritonitis is advanced and as a rule irremediable. If it be free gas in the peritoneal cavity which causes obliteration of liver dulness, it must be present in considerable amount.

It is obvious that in the early stages of perforation the amount of gas which escapes from the opening must be dependent on the size of the opening and the amount of gas present in the stomach and adjacent bowel. I have operated in a case in which the opening in the ulcer was 3 cm. in diameter, but as a rule these perforations are small, in many cases being described as pin-point, and at the time of operation only fine bubbles of gas can be seen escaping very slowly. It would require a long time for the free gas thus escaped to produce much effect on liver dulness. Yet a high grade of peritonitis may already be present from the infection which has been liberated. I have operated in cases in which there was no free gas whatever in the abdominal cavity. When there is practically no gas in the stomach or duodenum there is naturally no escape into the peritoneal sac. Gas is not formed by the activity of gas-forming organisms in the peritoneal cavity until late in the disease. As an aid in helpful diagnosis, therefore, the obliteration of liver dulness is more of a hindrance than a help.

The leukocyte count is of some help, chiefly in differentiating such non-inflammatory conditions as gastric crises and abdominal angina. A leukocytosis appears very quickly in the vast majority of cases. In nineteen cases in which a complete blood-count was made the average leukocyte count was 16,082 per cubic millimeter and the polymorphonuclear neutrophils averaged 85.3 per cent. In one case of perforated gastric ulcer, however, the leukocyte count was 7,300 and the polymorphonuclear percentage 70. The perforation had existed eight and one-half hours and a well-marked diffuse peritonitis was present. A second case of perforated duodenal ulcer gave 8,850 leukocytes and a polynuclear percentage of 89. The highest count observed was 23,600, and the highest polymorphonuclear percentage was 95 in two patients, both of whom recovered. In this condition, therefore, as in appendicitis and other intra-abdominal inflammations, I deprecate the attempts which are occasionally made to set up the leukocyte or polynuclear count as arbiters of diagnosis or prognosis.

Finally, in the cases in which uncertainty exists as to the precise diagnosis the evidences of an acute abdominal catastrophe requiring surgery are so plain that from the point of view of treatment no mistake should occur.

METHOD OF TREATMENT

In discussing the method of treatment one thing should be clearly understood at the outset, namely, that success depends on promptness of action more than on any other single factor. If closure of the perforation is effected during the first twelve or eighteen hours a considerable percentage of recoveries may be expected even though the surgeon be inexpert. After about twenty-four hours the vast majority of patients are beyond human skill.

The influence of the time factor is seen especially well in this series. No operation was performed in ten cases, six of duodenal and four of gastric ulcer. In the six duodenal cases all the perforations had occurred over two days and the patients were practically moribund on admission. In only one of these cases was the attempt made to operate. In this case after a few whiffs of ether the patient became pulseless and the attempt was abandoned. Three other patients were in a dying condition, and the remaining two died without operation one and one-half hours after admission.

Of the four patients with gastric perforations, one, with a perforation of three days' standing, arrived at the hospital in a dying condition; one was practically moribund and died in five hours; one was pulseless, the symptoms of perforation dating back one week, and died in ten hours. Only one is given in the records as having sustained perforation within twenty-four hours. This patient was a man aged 40 who had felt the symptoms of perforation only six hours previously. Nevertheless his condition was such that he died untouched one hour after admission. This is the only patient that had had the perforation within twenty-four hours or less before operation who failed to recover, and this case shows that an occasional patient will succumb with fulminating rapidity. The ulcer in this case was 1 cm. in diameter and was situated on the anterior surface of the stomach.

These cases represent the only selection against operation, and had I felt that there was a chance of recovery or even of enduring the operation they would have been given the benefit of the doubt. At the present time in reviewing the records I am convinced that there was no chance of saving these patients, for as has well been said "the resources of surgery are rarely successful when practiced on the dying."

In the twenty-six patients operated on there were eight gastric and eighteen duodenal ulcers. Twenty-five recovered and one died. The death occurred in a patient who had a perforated duodenal ulcer of twenty-nine hours' standing. This was the only case in which more than twenty-four hours had elapsed before operation. The operation was simple suture of the ulcer, completed as rapidly as possible on account of the patient's condition. Death, however, occurred from toxemia in ten hours. Three of the patients had perforations which had existed for twenty-four hours before operation. The remainder were all operated on at various times within that interval. The patient that died also had the only case of duodenal ulcer in which simple suture of the ulcer was done. In all the rest a posterior gastrojejunostomy was made at the primary operation. In only two cases of gastric ulcer was a simple suture of the ulcer performed. The remaining six had a gastrojejunostomy in addition.

The line of treatment adopted in this series was (1) closure of the ulcer; (2) plication of the duodenum to obliterate its lumen and fortification of this area by covering with the gastrohepatic and the gastrocolic omentum; (3) posterior no-loop gastrojejunostomy; (4) tube drainage of the pelvis through a suprapubic stab. The after-treatment consisted in the sitting posture, continuous proctoclysis, prohibition of everything by mouth until peristalsis was reestablished as evidenced by auscultation and especially by the passage of flatus. The stomach-tube was employed freely for vomiting, regurgitation or gastric distention. Experimentation with food was begun after the passage of flatus, beginning with albumin water. No purgatives were given, but a cleansing enema was given on the third day after operation.

These results warrant a strong plea for the performance of gastrojejunostomy as a primary procedure in addition to the closure of the perforation. The only exception I would make is in the case of patients who are desperately toxic or shocked, and the only condition I would impose is sufficient degree of familiarity and dexterity with the operation of gastro-enterostomy.

I have already spoken of the good general condition of the majority of these patients in the early hours after perforation. Gastro-enterostomy is one of the least taxing of major abdominal operations in respect to shock. Are not the objections to its performance rather theoretical than real, and should not the benefits of the operation, both immediate and remote, outweigh the fancied dangers? The slight prolongation of the operation need only rarely be considered as a contra-indication. If one has any belief in the curative powers of gastro-enterostomy the future of the patient must be brighter than if suture only has been done. Patients will seldom submit to a secondary gastro-enterostomy after recovery from perforation. The supposed danger of the infection of the lesser peritoneal cavity by gastro-enterostomy has been much overrated. I have not seen an instance of this condition. The early peritonitis of perforated ulcer seems to be in many cases more a chemical than a bacterial peritonitis due to the irritating secretion from the duodenum and stomach. Of twenty cases in this series in which a culture was made from the peritoneal fluid, fourteen showed no growth. The colon bacillus was found four times, streptococcus once and a mixed culture of *Staphylococcus aureus* and *albus* and the *Bacillus alcaligenes* in the remaining case. This is quite a different state of affairs from the peritonitis due to perforation of the lower portion of the bowel. Of course, infection rapidly occurs, organisms accumulate and the end-result is not different from infection of the peritoneum from other sources, but it is evident that the bacterial element in perforated gastric and duodenal ulcer is less serious in the early stages than might be supposed. Moreover, if the general peritoneal cavity is able to dispose of the accumulated infection present at the time of operation, the lesser cavity may be trusted to dispose of the slight soiling at the time of gastro-enterostomy.

The primary gastro-enterostomy places the perforated area at rest, favoring immediate quiescence and ultimate healing. Coexisting ulcers, if present, are favorably influenced. The chance of perforation of a second ulcer is diminished. The risk of hemorrhage from the bed of the perforated ulcer or from a second ulcer is minimized. In the case of duodenal perforation any narrowing in the lumen due to suture is compensated for by the anastomosis. This permits thorough and sufficient enfolding of the ulcer without fear of gastric retention. In my cases I have purposely caused pyloric stenosis by plication in order not only to safeguard the closure of the perforation but also to establish and render permanent the function of the new opening. The risk of leakage is greatly lessened by this procedure. The administration of fluid and food by mouth can be begun earlier and with confidence.

All these factors make for a reduced primary mortality. Paterson, in 112 consecutive cases of perforated gastric ulcers, found that 11 per cent. of the patients died shortly after operation from a second perforation, from hematemesis or from leakage along the line of suture. In my series there were no deaths from these causes, a fact which may justly, in part at least, be attributed to the favorable influences of the gastrojejunostomy.

The only complication which gastro-enterostomy has added, so far as I can judge, is in one case of intra-abdominal hematoma probably from a vessel in the transverse mesocolon. It was necessary to operate and drain for this condition. One patient vomited for several days after operation, but recovered without any secondary procedure. The wound was infected in five cases. Postoperative obstruction occurred in two cases, requiring operation. Both patients recovered. In one case the obstruction was certainly, and in the other it was probably, due to adhesions along the tract of the pelvic drainage-tube. In the future in early cases with but little inodorous fluid I propose to omit pelvic drainage. Irrigation I never employ. The peritoneum not only does not need it, but is better able to cope with the infection if not flooded with watery fluid. Neither do I mop out the fluid through fear of doing injury to the endothelium. Through the suprapubic stab I aspirate the pelvic fluid during and after the operation.

With the remote results of this method of operation I am equally pleased. This phase of the subject I shall be obliged to reserve for a subsequent communication. I am at present advocating primary gastrojejunostomy for its beneficial influence on the immediate mortality of perforation. It is fortunate that this operation chances also to be the curative operation for many varieties of chronic ulcer, and we are not surprised, therefore, that its beneficial influence is felt in the subsequent history of these patients.

Finally, I wish to reiterate my conviction that, while gastro-enterostomy does not compare in importance with closure of the perforation in gastric or duodenal ulcers, it is nevertheless a factor of first magnitude in the immediate cure and ultimate result.

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ABSTRACT OF DISCUSSION

Dr. A. J. Ochsner, Chicago: I wish to emphasize the very great importance of recognizing the necessity of immediate surgical intervention whenever the group of symptoms that has been given exists. Now, if this group of symptoms should be present in a case of perforation of the gall-bladder, or of a thrombosis of one of the mesenteric vessels, or of acute pancreatitis, the indication for treatment would be precisely the same. Then if a surgeon of only mediocre ability should be present, the question might arise as to whether it would be best to wait for the purpose of obtaining a surgeon of great skill. The patient with any one of these conditions is very much more likely to recover in the hands of any surgeon who is clean and who knows enough not to do too much, within twelve or eighteen hours, than he would be in the hands of the best surgeon twelve hours later. So that here you have a condition in which the mediocre surgeon must simply provide a closure of the leakage and drainage for the surgeon who is to perform the gastro-enterostomy.

I believe that Dr. Deaver's advice to do a gastro-enterostomy is good. I believe it would be wrong for one who has not performed this operation to do it. The risk is too great, but any one can cover an ulcerated surface by folding it lengthwise; or he can cover it with a piece of omentum and then put in drainage. Dr. Deaver also advised stomach lavage and proctoclysis. That is good advice. We need not fear any harm from stomach lavage, provided nothing is put into the stomach after washing it out. If you follow out that treatment you will give the patient a mighty good chance to recover.

Dr. Deaver also tells you that the posterior gastro-enterostomy puts the parts at rest. Gastric lavage does the same thing. No matter what is wrong inside the gastro-intestinal tract, the two things to do are gastric lavage and proctoclysis.

I wish to emphasize particularly this one point, of taking these symptoms to mean that you must provide this form of relief. Suppose you have made the wrong diagnosis. If the patient comes to you a little late and you make a diagnosis of appendicitis or extra-uterine pregnancy, you make an opening over the appendix and you find it only slightly inflamed; if you find a few bubbles of gas there, you will say that there is a hole higher up. Of course, if there is a perforated appendix, you will know where the gas comes from, but that is a symptom or sign which must invariably lead you to make an opening higher up and do whatever your ability permits you to do.

Dr. R. C. Coffey, Portland, Ore.: If all duodenal ulcer operations could be performed by Dr. Deaver, I would not say a word in discussion, because I think he has outlined the perfect treatment, provided you have at hand an expert surgeon like Dr. Deaver and a hundred others I could mention. Unfortunately that is not always the case, particularly in the West. Probably two-thirds of the operations for acute abdominal conditions are done, not by the surgical specialist, but by the general practitioner who first sees the patient, the man who does his own appendectomies, and who goes into the abdomen with the full expectation of finding appendicitis in more than half of the cases. Instead of that he finds the condition that Dr. Deaver described. This is illustrated by the fact that within a week my assistant called my attention to the fact that I had done more cancer operations in the last year than I had done appendectomies. The reason for that is that the acute work in the West, like appendicitis operations, is done largely by the general practitioner. If the men who are capable of removing the appendix in an emergency were to treat the condition Dr. Deaver described, the mortality would be tremendous. On the other hand if they took the more moderate course, they would save a great number of their patients. If Dr. Deaver's paper were to be read only by surgeons, it would be ideal, but over half of the patients in this country are not operated on by skilful men but by men who do their own surgery, and who, instead of doing a gastro-enterostomy in thiry minutes, do it in three hours. It is dangerous. Those men who are not prepared to do gastro-intestinal surgery, but who are doing good emergency work, like appendicitis operations, ought to stay away from the more dangerous ground.

The treatment Dr. Deaver describes is the correct one. I bring the omentum over the ulcer. There is no danger of producing a fistula, providing you have the whole area covered with omentum. That will give you a good result, and men with meager skill or surgical ability will have almost as good a result as the expert surgeon who attempts to do the radical operation. Furthermore, gastro-enterostomy does not cure in a large percentage of these cases. The suturing over of the ulcer which has perforated is necessary. Infolding the intestine is only a temporary affair, and if you will take a roentgenogram a few weeks after the operation you will find that the duodenum is back where it was before the operation.

Dr. W. J. Mayo, Rochester Minn.: There are several things that Dr. Deaver brought up that are of very great importance, and one is that he puts all of his emphasis on the duodenal ulcer. Years ago it was gastric ulcer that was emphasized, but to-day it is duodenal ulcer because the surgeon has shown as good results from operations on patients with duodenal ulcer in at least 75 per cent. of all cases.

Dr. Deaver spoke of the acute abdomen. That is also a very important subject. The things that produce the acute abdomen are, first, the appendix; second, the duodenum; third, the condition of acute pancreatic perforation; fourth, perforation of the stomach, and of the gall-bladder; and in the pelvis we get conditions that simulate a thrombosis of the mesenteric vessels. If we keep these five things clearly in mind, we will get the vast majority of cases that will go to the general surgeon.

Dr. Deaver put emphasis on the question of early operation, just as Murphy, Deaver, Ochsner and others have done in regard to appendicitis. But it is even more important that we should have an early operation in duodenal ulcer, because in the average case we cannot expect to do the operation in twenty-four, thirty-six or forty-eight hours and still expect the patient to recover; the operation to be life-saving must be done within the first twelve hours. As Dr. Deaver said, the condition of the patient is extremely good in the first twelve hours, therefore, we can do a gastro-enterostomy if we have the patient where we can give him the best possible care, but that can be done only in good hospitals, with skilled assistants, with conditions favorable and with men familiar with the operation. It is better, however, to be operated on by the man with little experience, in twelve hours, than by the best surgeon in the world after twenty-four hours. He must do the one thing that will cure the patient at that time, and he must be mindful of the fact that the patient needs to have a second operation, and that it is only the living patient who can have a second operation.

The secretions in these ulcers are extremely acid. A chemical peritonitis occurs, and in a few hours the bacteria gain power, the infection spreads all over the already irritated peritoneum, and the patient dies. In gastric ulcer I would like to have Dr. Deaver say what course he would pursue in the first twelve hours. We have tried several plans. One of the best is to draw up the stomach, put a drain into the opening in the stomach, and drain into the bottom of the peritoneal cavity.

Dr. Wayne Babcock, Philadelphia: I feel, as have the last two speakers, that the chief problem is whether or not gastro-enterostomy should be done in these cases. I have had an experience with eighteen cases of acute perforated ulcer in the duodenum in which the condition was recognized, and the frequency of the condition as compared to acute gangrene of the appendix is about one to twenty-five. Many of the patients were admitted with the proper diagnosis, and many entered with a diagnosis of appendicitis. As Dr. Deaver said, residents after seeing one case usually recognize the second case.

The results of our treatment have been somewhat interesting because in no case have we done a gastro-enterostomy. In the early cases I believe I operated on these patients with a diagnosis of appendicitis, for symptoms are often in the appendix region, and when the abdomen is opened the appendix is found blistered, but the striking thing is that the fluid around the appendix is mucilaginous, not thin as one finds with appendicitis. Once we recognized this point we immediately opened above and found the ulcer. It is interesting that only seven of these eighteen patients gave a previous history of ulcer; two gave a history of somewhat recent abdominal traumatism. Of these eighteen, sixteen were men and two were women; young adults, of middle age. Eleven came to the hospital and were operated on after twelve hours had elapsed; seven reached the hospital and were operated on after twenty-four hours had elapsed. There was one that reached the hospital after seventy-two hours and one on the fifth day. The interesting feature in the last-mentioned case was that the patient recovered although there was a general peritonitis with a greatly distended abdomen. The patient who came to the hospital on the third day also recovered.

At the end of twelve hours one man died as the result of secondary abscess of the liver. Of the two that entered the hospital after twenty-four hours, one man entered on the twenty-seventh and the other on the thirtieth hour; both died, having been moribund on admission. The other fifteen recovered. In one case with a recent ulcer diagnosis, at first the attempt was made to suture the ulcer, but the suture does not hold well in sodden tissue, so after our first experience we put a pad of gauze against the ulcer and drained the abdomen and put the patient to bed.

The final results are of special interest. Of these fifteen patients only one continued to show ulcer symptoms; the other fourteen remained free from symptoms. The fifteenth returned after ten months and had a secondary gastro-enterostomy. In the case of the others, if a gastro-enterostomy had been done the good results obtained would have been ascribed to that operation and not to the procedure employed.

Dr. K. A. J. MacKenzie, Portland, Ore.: I have had very limited opportunity of observing the condition under discussion. The cases I have had, however, have served as some food for reflection and study. I can recall five acute cases of perforation in which there was extravasation of the contents of the stomach or duodenum, or both. These cases have been invariably accompanied by shock, so that in most instances operation looked like a serious matter. It was done, however, and satisfactorily in all instances but one. This patient died after seven days. Another patient had additional perforations and recovered after secondary operation. Two others managed to make their escape.

When the question of gastro-enterostomy is being considered as a measure of affording permanent relief in these cases, it makes me think seriously as to whether or not it is sound surgery; whether the technic which consists simply of incision of the abdomen and closure of the opening in the bowel, with adequate drainage and enteroclysis, is not perhaps the best. After all, we should avoid serious operations such as Dr. Deaver mentioned, because, even in the hands of skilful operators, they must consume at least twenty or thirty minutes. I am appalled to think that any group of patients should be able to stand it, so I would protest against such a procedure. Any surgeon who is a great anatomist like Dr. Deaver takes a serious responsibility in proposing such an operation before a gathering of this kind. I should say that even in the hands of the average operating surgeon the mortality would be very much higher than it would be if a more simple procedure were followed, such as that proposed by Dr. Babcock. I do not think that the great surgeons should recommend these more serious operations. It reminds me of what Mr. Lane proposed some years ago, the removal of the colon; we have no opportunity afterward of unscrambling the egg. When a proposal such as this is made, when this paper, for instance, goes out into the world, a great many operations will be performed, whether by skilled surgeons or otherwise matters not, and many patients will die. The mortality will be large, so large that the figures will be appalling, and those who propose this operation must feel some degree of responsibility.

Dr. H. T. Sutton, Zanesville, Ohio: It might be of interest for me to recite an experience that I had a few years ago with a strong, otherwise healthy man of 29, who complained of indigestion of several years' standing and gave a history of having had the symptoms that Dr. Deaver would pronounce those of perforation of the stomach. I examined him and concluded that he was suffering from a gastric ulcer. I advised operation. On opening the abdomen, I found the omentum plastered to the stomach, and not having the experience nor the skill of Dr. Deaver I proceeded to uncover the stomach to see what had happened. I found that there had been an ulcer and that a perforation had occurred, which Nature had buried very kindly, much better than even a Deaver or a Mayo could have patched it up. The result was that that man was very miserable the rest of his life, and advised all his friends never to submit to an operation, because he had been very comfortable before and was very miserable afterward. So that if we are going to operate on all these patients who simulate ulcer of the stomach or duodenum, God pity humanity. So far as I am concerned personally, if I had an ulceration of the stomach with perforation, I tell you that, notwithstanding the greatness of the men who have spoken, I would rather be treated by the poorest physician than be operated on by the best surgeon.

Dr. John B. Deaver, Philadelphia: I am very much obliged to those who agreed with me so heartily. As for the last speaker, he belongs in the medical section, not in the surgical, but if he stays here long enough he may soak up some wisdom. As to the question of the family doctor operating, we are not living in that age, I hope. This is not an operation for the family doctor to do; it is not an operation for the man who does obstetrics and attends scarlet fever and measles. It is an operation for the surgeon and only the expert surgeon should undertake it. There are certain conditions that are extenuating circumstances. Judgment must be exercised. The operation must be adapted to the case and not the case to the operation. Nevertheless, the principles underlying my contentions are correct—this operation accomplishes the greatest amount of good in the greatest number of cases. We need pay no attention to the crossroads surgeon. The man who has not the experience and ability has no business to do intestinal surgery. Only those surgeons who have spent a lifetime doing this work ought to be allowed to do it. There are few places in this country in which a surgeon cannot be found who can do this work within twelve hours. Patients do not die in twelve hours. I have never seen one die yet. At the end of twelve hours you can do so much surgery that you will be surprised that they do not die. They never die if you are operating in a sterile field. The Germans called attention to the bacteriology in this class of cases, and the good surgeon of to-day is the man who understands bacteriology. In my thirty cases there were only four from which I could grow a culture. The others were sterile, and the patients were operated on within twelve hours. That is the time when we are operating in a sterile peritoneal cavity.

Dr. Mayo emphasized certain points that are true. Certain cases of gastric ulcer really do not permit of a posterior gastro-enterostomy. I have had one patient with three consecutive perforations, the last one being in the posterior wall of the stomach. He recovered. This is a very important subject. I am sure that you understand my position in the matter, particularly as to who should and who should not perform these operations.

RADIUM IN SKIN DISEASES*

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The preliminary note that I present at this time with reference to the action of radium in skin diseases is based on studies made on forty-five patients with fifteen different skin affections who have had in the aggregate about one thousand applications of radium.

Some experiments made on guinea-pigs with the help of Dr. Korper of the Sprague Memorial Institute to determine the effect of radium on experimental cutaneous tuberculosis will be only briefly referred to here.

The whole subject of the physics of radium is on a well-established foundation. Radium gives off spontaneously two different therapeutic forces—the emanation and the rays. The emanation has been used principally in the domain of internal medicine.

In the treatment of skin diseases the rays are mainly utilized by simply applying the radium directly to the diseased area. A very useful modification of this method consists in the interposition of screens or filters between the radium and the skin. The use of screens was developed originally by Wickham[1] from a consideration of the different characters of the alpha, beta and gamma rays emitted by radium. The alpha and soft beta rays produce a dermatitis rather easily. The hard beta and gamma rays, isolated by screening out the alpha and soft beta rays, act deeply and produce little or no superficial inflammation unless the action has been very prolonged.

Reaction in the tissues produced by radium may be, first, "selective." Certain vascular nevi may be dissipated without visible inflammatory changes in an absolutely unique manner.

Second, radium reaction may be "inflammatory." In practice, one utilizes, of course, both the selective and the inflammatory reactions in achieving results.

Taking as a type a radium applicator having a flat surface of 4 sq. cm. and containing 4 cg. of mixed radium sulphate and barium bromid (alpha rays 20 per cent., beta rays 76 per cent., gamma rays 4 per cent.), one may produce various results on healthy or noninflammatory pathologic tissue. The reaction produced depends principally on the length and frequency of the exposure to the rays.

After an exposure of thirty minutes redness appears on the skin in about three days. This is accompanied by slight burning and itching. Desquamation occurs and in about three weeks the reaction has subsided. An exposure on three successive days, one hour each day, produces an inflammatory reaction that is marked and unique. At the expiration of about three days redness appears. The skin becomes itchy, somewhat swollen and tender to the touch. A crust gradually appears which is of greenish-yellow color and rests on a dry or slightly excoriated base. The crust, which may be 0.5 cm. thick, resembles in appearance that of impetigo contagiosa. The crust lasts for two or three weeks and may fall off spontaneously and renew itself several times. Finally, at the expiration of four or five weeks, a pink and then a normal skin surface is left.

In applying radium for curative purposes the personal factor is important. Regard must be paid to the exact character of the lesion in order to bring about a favorable result.

REPORT OF CASES IN WHICH RADIUM WAS USED

The cases in which I have used radium may be briefly reviewed:

EPITHELIOMA

I have treated about a dozen cases of epithelioma situated on the face. In this number are included two cases of epithelioma of the lower lip. In neither of these was there any demonstrable metastasis.

In one case, in which an epithelioma had existed at the mucocutaneous junction of the lower lip for three years, radium was applied unscreened for three hours and then with a silver screen (0.1 mm. thick) for four hours. The applications extended over several weeks. A slight dermatitis and some soreness of the lip followed which soon subsided. It would now be difficult to detect the site of the former epithelioma.

In a second case, an enormous epithelioma had been present on the lower lip for eight years. It had taken on great activity in the eight months prior to my observation and when first seen involved almost the entire lower lip. At first radium was applied unscreened. After three preliminary applications the exposures were continued through silver screens (0.1 and 0.5 mm. in thickness). The applications were made both on the external and internal surfaces of the lip. This "cross-fire" method, advocated by Wickham,[2] evidently allowed greater concentration of the rays at a depth without injury to the superficial tissues. In the course of two months the patient received twenty applications. While complete recovery has not yet occurred the progress has been very satisfactory. At the present time only a very slight infiltration marks the site.

I would not be understood as advocating this as the method of choice in epithelioma in this situation. In patients who refuse operation and in whom there is no evidence of metastasis, radium treatment has been shown to be effective. In ten cases of epithelioma of the rodent-ulcer type, situated on the temple, at the side of the nose and other parts of the face, I have obtained successful results with radium.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Wickham and Degrais: Radiumthérapie, Second edition, 1912 p. 43.

[2] Wickham and Degrais: Radiumthérapie, p. 77.

From present experience, the radium treatment of epithelioma may be summed up by saying that it is useful in the same general class of cases in which we now use Roentgen rays. Its effectiveness as compared with x-rays cannot now be decided. Much depends on the operator, the amount of radium available and the method of use. Only time and continued observation will determine this question.

Wickham[3] has reported cases in which radium was successful in healing certain epitheliomas after Roentgen rays had failed. Doubtless the reverse may be true and some epitheliomas may be more amenable to x-rays than to radium.

In certain epitheliomas that are inaccessible to Roentgen rays because of their position in some cavity of the body radium occupies a unique position. I have treated an inoperable carcinoma of the cervix without producing, however, any appreciable improvement. This case had previously been subjected to injections of zinc chlorid which had caused sloughing and the radium treatments could not be carried out with the necessary vigor.

In a case of cancer of the cervix, under Wickham,[4] radium caused so great a change in the tumor that it was successfully removed, although previously regarded as inoperable.

In an inoperable cancer of the buccal cavity now under my care great improvement is being produced by radium.

Wickham[5] treated successfully a case of recurring carcinoma of the breast by injecting below the tumor 0.1 mg. of radium sulphate mixed with paraffin petrolatum, at the same time applying above the tumor an ordinary radium instrument.

Abbe's method of introducing radium tubes into incisions made in tumors should be mentioned.

Finally, although the use of radium has been extended gradually from small benign growths to large malignant tumors, the cases should be selected with the greatest care in order not to deprive patients of other treatment that may at times be more effective.

OTHER CONDITIONS

Angioma.—Three cases have been treated. In a boy, aged 10, a flat angioma affected the left side of the nose, the inner canthus of the left eye and the adjacent part of the forehead. In the second case, that of a man 38 years old, the right side of the neck was extensively affected. The third patient, a male baby, 6 months old, had a cavernous angioma of the lower lip. In the areas so far treated a beautiful smooth scar of satisfactory color has been produced, but as none of these cases has been completed, comment on them will be deferred.

In the hands of Wickham[6] radium therapy has had one of its most brilliant successes in the treatment of the different types of angioma.

The absence of pain and the beauty of the cosmetic result are noteworthy. The possible late development of telangiectases may slightly mar the final result, but these fortunately can be removed and to some extent precluded by avoiding too strong doses.

Nevus Pigmentosus.—A hairy, pigmented, verrucose nevus, 16 sq. cm. in extent, situated over the extensor surface of the left elbow in a young man aged 24, was successfully removed. The site of the former nevus is remarkably like normal skin. In these nevi the pigmentary layer must be destroyed, otherwise repigmentation may occur.

Tuberculosis.—One case of lupus vulgaris was treated with radium. A patch on the cheek of a child aged 12, which had been present for six years, was exposed for five hours in the course of ten days. Rather severe reaction followed but in six weeks complete recovery ensued.

Tuberculosis Verrucosa Cutis.—Two cases have been treated. In a man, aged 35, a verruca necrogenica on the palmar surface of the third finger of the right hand was given an exposure of three hours in the course of ten days. Moderate reaction ensued and this was followed by the complete disappearance of the lesion. In a girl aged 13, a similar lesion was present on the dorsum of the first phalanx of the right middle finger. This patient had, in addition, enlarged cervical lymph-nodes and kyphosis of the upper dorsal spine. An exposure of four hours was given in the course of three weeks. Normal reaction is now taking place so that the final outcome of this case has not been determined. According to Wickham[7] this type of tuberculosis is particularly amenable to radium.

Syphilis.—In a man, aged 40, with a syphilitic eruption appearing six or seven years after the primary lesion and consisting of large, flat, scaly plaques, radium was used experimentally for twenty minutes on several lesions. This was followed by their prompt disappearance in less than three weeks, although the other untreated lesions persisted.

Blastomycosis.—In a man, aged 24, a patch of blastomycosis about 1 sq. cm. in extent, situated at the inner canthus of the left eye and involving the upper and lower eyelids, had been present for three months. The diagnosis was confirmed by the microscopic examination of a section. Radium was easily applied and was held in place by the patient. At the present time, normal reaction is taking place. The belief is entertained that on its subsidence recovery may occur.

Sycosis Vulgaris.—Two cases of sycosis vulgaris have been treated with radium. While neither case has progressed sufficiently to allow of a definite opinion as to its exact value in this affection it seems probable that radium will prove a great addition to our armamentarium. Depilation can be easily produced. Wickham[8] treated one case successfully by permanently removing the hair.

Keloid.—Two cases were subjected to radium. In one case, great improvement ensued but the patient was lost sight of before the final outcome could be determined. The second case is now under treatment and the result will be reported at a future time.

In the hands of Wickham[9] the various types of keloid have been particularly amenable to the selective action of radium..

Hypertrichosis.—In a man, aged 22, with an abnormal triangular patch of hair extending from the scalp to a point two centimeters below the hair line in the center of the forehead, five applications of radium produced complete and permanent alopecia. The quality of the skin from which the hair was removed is practically the same as that of normal skin. In certain types of localized hypertrichosis radium treatment seems to be the most effective method of relief.

Dysidrosis.—One case of dysidrosis of the palm was treated with radium. The patient had suffered from previous attacks on the hands and feet which had persisted for several months. Constantly recurring outbreaks of vesicles on the palm had prolonged the present attack for four months. Applications of radium, each lasting fifteen minutes were made Five exposures brought about complete recovery in two weeks.

Neurodermatitis.—In a woman, aged 42, seen through the kindness of Dr. H. B. Thomas, a typical patch of neurodermatitis had existed on the left labium majus for eight years. No relief from the intolerable pruritus had been obtained by the ordinary methods. Radium was applied over the patch for ten minutes at a time at intervals of several days. Symptomatic recovery ensued after six treatments. Four months later this case reported that the improvement had been maintained. Several cases of localized chronic eczema have also been treated with radical relief of the pruritus.

Trichophytosis of the Finger-Nails.—In a woman, aged 25 years, seen through the courtesy of Dr. Philip Shaffner, ringworm of the nails had existed for ten years. The diagnosis had been made by Dr. Shaffner by microscopic examination of the nail-substance and by cultures. On the left hand all the nails were involved except the little finger-nail. On the right hand the nails of the middle and ring fingers were affected. Four applications of radium, each lasting an hour, were made. At the expiration of about a week from the last application some soreness of the nail was complained of and slight redness of the peri-ungual tissue appeared. A week later a little seropurulent material could be expressed from beneath the free edge of the nail. Complete exfoliation of the nails has not taken place but the hope is entertained that with this occurrence the new nail may be free from the fungus.

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[3] Wickham and Degrais: pp. 155, 157.
[4] Wickham and Degrais: p. 209.
[5] Wickham and Degrais: p. 204.
[6] Wickham and Degrais: Ibid., p. 250.
[7] Wickham and Degrais: Ibid., p. 311.
[8] Wickham and Degrais: p. 352.
[9] Wickham and Degrais: 231.

Lichen Planus.—In a case of ordinary lichen planus with lesions of the scrotum and thighs, radium was very effective in relieving the itching. In a case of lichen planus verrucosus of extreme development, a number of warty plaques which were situated on the legs near the ankles, were treated with radium. The great rebelliousness of these plaques to all ordinary treatment except perhaps Roentgen rays is well known. While the progress in this case has been very satisfactory, further comment will be made at some future time.

Psoriasis.—Several cases of psoriasis have been treated with radium. Three or four treatments of five or ten minutes each are sufficient to remove a patch of psoriasis. In psoriasis of the nails, Blaschko[10] (quoted by Wickham) states that radium is superior to all other methods of treatment.

Lupus Erythematosus.—Ten cases have been treated. They varied in duration from six months to eighteen years and in severity from small patches, a centimeter in diameter, to areas involving nearly all of the nose, cheeks and ears. In one peculiar case, only the lower lip and backs of the hands were involved. The lip, which was thickly crusted, was given an exposure of thirty minutes. In three weeks the crust fell off and a practically normal surface was left which has remained well to the present time. Four of the remaining cases were well when last seen. All of the others have shown great improvement.

The treatment of lupus erythematosus is necessarily slow, particularly in the extensive cases, as each area involved must, of course, be subjected to treatment and time must be allowed for the subsidence of the reaction which may be produced. Following the advice of Wickham,[7] the line of application of the radium was allowed to extend beyond the diseased area in order to preclude possible extension of the patch at the border.

An exposure of an untreated area for thirty minutes is followed by the appearance of increased erythema after about sixty hours. The slight itchiness of the disease is relieved. Swelling and some soreness of the patch ensue. Gradually a crust appears which, at the end of two weeks, may be several millimeters thick. The crust is very adherent and persists for three or four weeks. If it is detached during this time it is seen to rest on a slightly excoriated base.

Certain patches become normal after a single treatment. Frequently, however, slight scaliness and erythema persist and the exposure must be repeated. In a second or third similar exposure the patch reacts less markedly.

At the present time an exposure of about thirty or forty minutes is being given, followed in a few days by two shorter exposures of ten to fifteen minutes each. Patches covered by thick crusts or scales demand longer treatment than the more erythematous patches. While the capricious character of lupus erythematosus makes it difficult to estimate the effect of any treatment, radium is undoubtedly a great addition to our resources in this intractable affection.

59 East Madison Street.

ABSTRACT OF DISCUSSION

Dr. M. L. Heidingsfeld, Cincinnati: Radiotherapy is attracting more and more attention and anyone who is acquainted with the work of Wichan of Hamburg and Schiff of Vienna cannot but be impressed by their results. They speak for themselves, but there are certain features about radium which should not be overlooked. In the first place, you cannot expect good results from it unless you have a very active preparation, the price of which is almost prohibitive, as a sufficient quantity of radium of that strength would cost about $10,000. About seven years ago I paid $1,500 for a small quantity of radium and, after working it for a year or eighteen months, I found that it did not answer my purpose and I abandoned its use. In the last few years, in Europe, they have substituted for radium the preparation known as mesothorium, which is much cheaper. There are certain disadvantages, however, connected with its use, in that it loses its activity in the course of four or five years and in the course of time becomes worthless. It is therefore not a stable preparation.

Radium seems to have a special predilection for lesions about the lips and inside of the mouth, and its most brilliant achievements have been in connection with the treatment of angiomas, particularly those of the deep-seated type. In ordinary nevi it is not necessary, as they usually yield very readily to other measures, especially to application of liquid snow. The cosmetic effects following the use of radium are excellent.

Dr. M. L. Ravitch, Louisville: In what we have heard about radium, I think the psychologic effect had more to do with the cures than the radium itself. I have given radium a thorough trial and I am compelled to confess that my results with it were unsatisfactory. We have practically no knowledge regarding the action of radium and its method of penetration, and I have never been able to become enthusiastic regarding it, in spite of the very miraculous results with it as reported by Dr. Robert Abbé of New York in a paper which, I believe, he read before the International Medical Congress in 1907. We have certainly obtained no such results with radium here. Hallopeau reported results quite opposite to Dr. Abbé's, and he warned the profession against its careless use. Radium has a greater uniformity than the Roentgen rays; still we do not know what injury may occur from gamma rays with their deeper penetrating power.

Dr. Joseph Zeisler, Chicago: Lest any of you might be tempted by Dr. Heidingsfeld's remarks in regard to the cheapness of mesothorium, I might say that it is still selling at 150 marks per milligram, and as it is necessary to have at least 20 mg., the cost would be 3,000 marks, or $750. I have seen several of Dr. Simpson's cases which were treated with radium, and in some of them the results were very satisfacory—about the same as we have seen from the Roentgen ray and other methods. The results in lupus erythematosus were not sufficiently brilliant to cause me to become enthusiastic regarding them, and in dealing with a new therapeutic agent, like radium, I am led to believe that we are apt to lose sight of older and equally satisfactory methods. I recently saw a case of senile keratosis of the face and hands in which some of the lesions were about to degenerate into epithelioma. With the idea of saving the patient a long-continued Roentgen ray treatment or the rather painful refrigeration method, I prescribed elastic collodion, with 5 per cent. salicylic acid and a small amount of bichlorid of mercury, and under application for five days these keratomas disappeared promptly.

Dr. Fred Wise, New York: I should like to ask Dr. Simpson the size of the keloids in which he used the radium.

Dr. Alfred Schalek, Omaha: Even if we have no knowledge regarding the action of radium, that is no reason why we should not employ it, because the more we use it, the more we shall learn about it.

Dr. H. R. Varney, Detroit: Dr. Simpson has given us a preliminary report on the action of radium in skin diseases in which he has covered a variety of dermatoses. I trust that he will continue his work with this agent and report his results at a subsequent meeting. My experience with radium has not been so encouraging as that of the reader of the paper.

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[10] Wickham and Degrais: p. 345.

I used it for some years without resulting benefit. It is possible and quite probable that the specimen I secured was not sufficiently active.

Dr. Frank E. Simpson, Chicago: In presenting this preliminary report on the action of radium in skin diseases I did not hope to escape a certain amount of criticism for being perhaps unduly enthusiastic about the value of this agent, nor am I inclined to retract anything I said regarding it. My interest in radium dates back to a visit I paid Wickham about two years ago, and any one who has visited him at his home in Paris and has seen the results he obtained would feel equally enthusiastic in regard to the value of this remedy. I feel assured that with a similar preparation of radium we could all get the same results as he has demonstrated. Psychology has nothing to do with it. The preparation of raidum I use has an activity of 500.000. and was purchased through Wickham himself. Of the two cases of keloid in which I used the remedy, one was an acne keloid, which improved considerably. The other was an extensive keloid on the upper arm of a young girl; this has also shown marked improvement, but the case is still under treatment.

SKIN COMPLICATIONS OF DIABETES *

BURNSIDE FOSTER, M.D.
ST. PAUL, MINN.

A person suffering from diabetes may of course become afflicted with any form of skin disease, but there are a number of dermatoses which have long been recognized as being directly caused by diabetes, and which improve or grow worse as the amount of sugar in the urine diminishes or increases. There have occurred in my practice many cases in which the diabetic condition of the patient was first recognized as the result of a physical examination, brought about through a consultation for the purpose of obtaining relief from the skin disease. I have thought, therefore, that a brief discussion of the subject, commonplace though it may be, might be interesting and perhaps instructive.

My experience has taught me that many general practitioners fail to appreciate the close relationship that exists between diabetes and many skin affections, and that unless the classic symptoms of the former are present they do not look for sugar when consulted, for instance, concerning an obstinate pruritus, a dermatitis or furunculosis. Consequently, I have made the diagnosis of diabetes a good many times in patients who had been referred to me by capable physicians of experience. Most dermatologists have had this occur in practice.

Many cases of diabetes have existed for a long time without symptoms, and sometimes the earliest symptoms are those appearing on the skin.

Dryness of the Skin.—A very common symptom of diabetes is a general dryness and harshness of the skin and mucous membranes, probably due, I suppose, to the hygroscopic nature of the sugar circulating in the blood, which draws water from the tissues through which it passes and leaves them abnormally dry. An annoying and sometimes very intense pruritus results. I have notes of eight patients in whom this symptom alone led to the discovery of sugar in the urine which had not been noticed before. Local treatment is of little avail in this condition, which promptly disappears when the proper treatment for diabetes is instituted. A marked anhidrosis is usually present and there is often a general desquamation of the skin; sometimes, as in one of my patients, so extensive as to resemble the appearance of exfoliative dermatitis. The opposite condition of hyperhidrosis has been reported as associated with diabetes, but this I have never seen and am inclined to think it must be simply a coincidence. Dryness and thinning of the hair quite commonly accompanies this general xeroderma and atrophy of the nails is sometimes seen.

Furuncles and Carbuncles.—Probably the commonest affection of the skin complicating diabetes is furunculosis and carbuncle. The furuncles may occur on any part of the body and are more deep-seated and indurated than the ordinary furuncle and not infrequently become gangrenous. In my experience they have been less painful than the ordinary furuncle, but the slough has been deeper and their course is very slow. Sometimes they appear in the form of an acne on the face. I have in mind one patient, a physician, who acquired syphilis some years ago and who has lately developed diabetes. He has a most obstinate, deep-seated, indurated pustular acne, which is rebellious to all local treatment, but which improves whenever he adopts a rigorous antidiabetic diet, and recurs again when he returns to an abundant carbohydrate diet and begins to excrete sugar in his urine. Carbuncles and deep-seated phlegmons are much less common than furunculosis and are usually seen in the more advanced stages of the disease. In the cases I have seen, they have always been accompanied by extreme prostration and have nearly always been the cause of the death of the patient. A deep-seated carbuncle in a diabetic patient is an extremely dangerous complication.

Dermatitis.—The general surface of the skin of diabetics is peculiarly prone to take on erythematous and eczematous conditions, frequently due, no doubt, to the irritation produced by scratching to relieve the intense pruritus so often present in this disease. The genital eczema, or, as it is more properly designated, dermatitis, of both sexes, which, next to furunculosis, is the commonest skin affection in diabetes, is usually ascribed to the irritation of the sugar-laden urine which comes into contact with the external genitals. I believe that this explanation is correct, because I have just now under observation two women who came to me, one two years and one about a year ago, with most extensive inflammation of the external genitals, and in both of whom diabetes was first discovered as the result of that condition. Under careful diet and general treatment the sugar was greatly diminished in amount in both of them and the skin promptly returned to a normal state. I gave them each careful instruction to avoid wetting the skin with urine and ordered stearate of zinc to be applied liberally to the parts just before each urination. At the present time both of these patients are passing a varying amount of sugar constantly, but are able to keep the skin from becoming inflamed by taking the above-mentioned precautions. A similar dermatitis occurs in men suffering from diabetes and is usually limited to the glans penis and prepuce, but sometimes spreads to the skin of the penis, the scrotum and adjacent parts. Local treatment of this condition is of little avail, but it improves rapidly when the proper treatment for diabetes is instituted. The abundant sugar-laden exudation, always present on these inflamed areas, furnishes an excellent culture medium for the saccharomyces and other fungi which grow profusely and increase the inflammation. The itching is intense and the constant scratching may produce deep ulceration which sometimes brings about extensive sloughing and even gangrene. Numerous cases have been reported in which small ulcerations about the genitals, in diabetics, have been mistaken for venereal sores and treated as such for some time before their exact nature was made manifest; one such instance has recently occurred in my practice.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Gangrene.—The tendency of diabetics to gangrene of the skin has long been recognized and since this complication usually occurs in old and feeble patients, whose diabetes is of long duration, it is apt to be a very serious and often a fatal complication. Gangrene may be either dry, resembling the ordinary senile gangrene, or moist, preceded by the formation of bullae of the skin. It may occur on any part of the body, but is commonest on the extremities, particularly in old persons who already suffer from arteriosclerosis. Surgery offers the only hope when gangrene occurs and since these patients do not bear surgery well, the outlook in such cases is very dark.

Malum Perforans.—Sample and Gorham[1] report in detail seven cases of this complication of diabetes and cite the literature as collected by various other observers, showing that it occurs in about 3 per cent. of the cases reported. In nearly every case the patient was past 40, and it has been found with much greater frequency in males than in females. In practically all of the cases the glycosuria has been of a mild type. The initial lesion is usually in the form of a small vesicle, later developing into an ulcer, the metatarsal phalangeal joint being the favorite seat of the lesion. Many patients recover unless gangrene supervenes. I have seen but one instance of this complication.

The above-mentioned are the commonest skin affections that complicate diabetes and are practically the only ones with which I have had much personal experience. Psoriasis has been frequently reported as occurring in the course of diabetes, and I have seen one such case, but I cannot believe it to be more than a coincidence. Other skin complications of diabetes, such as xanthoma diabeticorum, urticaria, dermatitis herpetiformis, herpes zoster and purpura are all rare, and I have had but little experience with them.

I have frequently wondered whether or not sugar is excreted in the sweat of diabetics and, if so, whether its presence on the skin would not account for some of the inflammatory diseases which occur in the course of this disease. I have not been able to find any literature on this subject and hope that some member of the Section can enlighten me.

Importance of Skin Symptoms of Diabetes.—I have called attention to this general subject thus briefly in the hope that the discussion will emphasize the fact that the first symptom of diabetes may be some affection of the skin, a fact which seems to me not sufficiently recognized by the general practitioner. The early recognition of diabetes is of the greatest importance to the patient because, while the ultimate prognosis of the disease is probably always bad, there are few of the serious diseases of life which are more amenable to intelligent treatment. Diabetics in whom the disease has been recognized in its early stages may live for many years, and enjoy a comfortable life, if they are willing to submit, as most of them are, to the proper hygienic and dietary regimen.

821 Lowry Building.

ABSTRACT OF DISCUSSION

Dr. John M. Armstrong, St. Paul: I have seen several cases in which workers in sugar developed a dermatitis of the skin which disappeared when they gave up their occupation, only to recur when they returned to handling sugar.

Dr. Ernest D. Chipman, San Francisco: Dr. Foster's very interesting paper suggests a thought which we, as dermatologists, should constantly bear in mind; namely, that in our observation of skin lesions we are many times in a position to detect serious constitutional disorders. Diabetes is a case in point, and it is only one of a number of constitutional disorders the presence of which should at least be suspected and investigated in connection with certain cutaneous manifestations.

Dr. M. L. Heidingsfeld, Cincinnati: A week or so ago I saw a case of purpura of the feet, and on examination found the patient's urine loaded with sugar. In diabetes, I never fail to make a Wassermann, and it is surprising to find how large a percentage of positive Wassermanns we get in these cases. Furthermore, they frequently respond beautifully to antisyphilitic treatment, particularly to salvarsan.

Dr. K. A. Zurawski, Chicago: The recognition of certain lesions of the skin which are due to diabetes is very important, especially in those cases in which sugar is absent in the urine. We know that there are many cases of diabetes in which for a certain length of time there is no sugar in the urine, and yet there is a change in the metabolism of the sugars. Especially is this true in some of those abnormal cases in which the diabetes is due, not to an extreme ingestion of carbohydrates, but to a vicious tendency to transform the nitrogenous substances into carbohydrates. This is due to a faulty metabolism of the nitrogenous substances. It is a proved fact that nitrogenous substances are much more frequently broken up into carbohydrates than we have hitherto been led to believe.

Dr. H. E. Menage, New Orleans: This discussion seems to open up an avenue which should broaden a little bit more. A few years ago Dr. Matas and I saw a woman with a carbuncle, which was operated on. Sugar developed after the operation, and the patient died. This suggested to us that in cases in which we have reason to suspect sugar and find none the urine should be examined for diacetic acid and the acetone bodies. Another point brought out was in regard to the relief of pruritus, particularly when localized about the genitals, by protecting the parts with stearate of zinc. I am convinced that the irritation is due to the contact of the diabetic urine with the skin and I found that by freely anointing the skin with petrolatum before urinating the pruritus is practically relieved and that this method of treatment is superior to zinc stearate or dusting powders.

Dr. Everett S. Lain, Oklahoma City: I have been very much interested in this paper, which is on a subject that should come up for discussion more frequently. We as dermatologists are too often prone to overlook internal conditions in the treatment of the skin. Recently I saw a case in which this fact was clearly shown. The patient was a woman who was on her way to Chicago to see a dermatologist, and her family physician advised her to go by way of Oklahoma City, where I saw her and noticed the peculiarity of the skin mentioned by Dr. Foster. Diabetes was suggested, but previous examinations of the urine had failed to detect the presence of sugar. The skin manifestations consisted of an extensive eczema, with marked pigmentation, somewhat similar to the condition met with in pellagra. Subsequently, sugar was found in the urine, and a radiograph showed both gastroptosis and enteroptosis. She was referred back to her family physician, who reported improvement and eventually apparent recovery.

Dr. Burnside Foster, St. Paul: I regret that no one has attempted to answer the question which I asked in regard to the possible presence of sugar in the sweat of diabetics. That might possibly explain some of the skin phenomena. As Dr. Armstrong stated sugar is known to produce inflammation of the skin when applied externally, as is shown by the so-called "grocer's itch"—a dermatitis produced by the handling of sugar.

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[1] Sample and Gorham: Johns Hopkins Bulletin, January, 1913.

THE TRANSMISSION OF TREPONEMA PALLIDUM FROM THE BRAINS OF PARETICS TO THE RABBIT*

HIDEYO NOGUCHI, M.D.
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The finding of *Treponema pallidum*[1] in the substance of the brains of paretics has now been confirmed by several investigators in this country and abroad. Since the first report in which the *pallidum* was described as having been discovered in twelve of the seventy brains from which sections had been studied, I have now found the spirochetes in thirty-six of one hundred and thirty additional brains, from which sections stained by the modified Levaditi method[2] were examined. Thus, in two hundred cases of paresis so far studied the *pallidum* has been seen by me in forty-eight, or in nearly 25 per cent. of the specimens. I have, moreover, also succeeded in finding the micro-organism in one of twelve specimens of the spinal column, studied from cases of tabes dorsalis. A spiral organism morphologically identical with the *pallidum* was in this instance found in the posterior columns of the cord.

The findings already at hand, therefore, indicate unmistakably that *Treponema pallidum* plays an important part in the pathogenesis of general paralysis and possibly in tabes also. Since the demonstration of this micro-organism in sections, however, merely indicates its presence in relation to the pathologic lesions of these diseases, it becomes of great importance to ascertain from living examples something of the biologic properties of this organism, which remains so persistently within the central nervous organs in these two pathologic conditions. This is especially desirable since the conditions are so unlike the typical manifestations of syphilis, in which the *pallidum* is far less resistant.

The question at once arises whether the spirochetes within the nervous organs are capable of producing lesions in animals similar to those caused by the *pallida* contained within the primary and secondary syphilitic lesions.

Through the courtesy of Dr. Rosanoff of King's Park State Hospital and Dr. Lambert of the Manhattan State Hospital, I obtained six fresh brains from paretic individuals. I succeeded in one of these in demonstrating in the fresh state the *pallidum* under the dark-field microscope. Rabbits were inoculated with emulsions prepared from the fresh brain tissues from the six cases. The emulsions were injected intratesticularly with approximately 1 c. c. of the emulsions prepared in about ten volumes of citrate solution from pieces of brain tissue taken from various convolutions. Thirty-six rabbits were inoculated. With the exceptions about to be mentioned, the inoculations were followed by the usual evanescent inflammatory reaction, after which no further pathologic change was detected during a period of observation varying from three to six months.

From brain specimen 522, given me by Dr. Rosanoff, six rabbits were inoculated. The brain was obtained from a man 59 years old, who had been transferred, without previous history, to King's Park State Hospital on May 28, 1912. An abstract of the notes made on the case by Dr. Rosanoff is as follows:

The pupils were irregular; the left did not react at all; the right reacted very slightly to light; knee-jerks were absent, and the gait and station were both highly ataxic; the speech was slurred and the hands tremulous; grandiose ideas existed. A lumbar puncture on Jan. 5, 1913, yielded cerebrospinal fluid containing an excess of lymphocytes reacting positively, both to the butyric acid and the Ross-Jones test. Death took place on Feb. 16, 1913. The brain was found atrophied and the ependyma granular. Microscopically examined the brain showed the typical pial and cortical perivascular infiltration with lymphocytes and plasma cells. The immediate cause of death was bronchopneumonia.

Two of the six rabbits (Nos. 64 and 110), each of which received one cubic centimeter of the brain emulsion into each testicle on Feb. 17, 1913, gave the following histories:

Rabbit 64 developed an abscess in the left testis, whi opened spontaneously on February 21 and then subside except for an induration which persisted. On March 25 exudat was withdrawn by means of a capillary pipet, and showe no *pallida*. At this time the Wassermann reaction was negative. On April 10 the induration, which had persisted throughout, altered in appearance and now suggested a syphilitic lesion, but spirochetes could still not be demonstrated. The Wassermann reaction, however, was now weakly positive. On May 20 a nodule the size of a pea was noted in the parenchyma of the organ, but I was unable to find the *pallidum* in it. The Wassermann reaction was unchanged. On June 6 a typical chancre-like induration was present in the scar of the old abscess. A large number of *pallida* were now found under the dark-field microscope, and the Wassermann reaction had become strongly positive.

Rabbit 110 developed suppuration in both testes. The left opened on February 21, and the right on February 25. On March 15 both testes remained indurated. On March 25 the induration continued, but neither the *pallidum* nor Wassermann reaction was present. On April 10 the induration was taken on characters suggestive of a syphilitic lesion, but still no *pallida* were found. The Wassermann reaction had become weakly positive, however. On May 20 a distinct nodule appeared in the parenchyma of the right organ. While no *pallida* were found under the dark-field microscope, the excised tissue stained by the Levaditi method showed a small number of unmistakable morphology. The Wassermann reaction was unchanged.

DEDUCTIONS

The results indicate that typical syphilitic scleroses containing *Treponema pallida* have been produced in the testes of two rabbits by the inoculation of an emulsion of the brain obtained from a paretic individual.

The lesions developed slowly, requiring in the one instance ninety-two and in the other one hundred and five days. Taken all together the percentage of successful inoculations is thus far small, since they were obtained with one brain out of six. Both in respect to the slow development of the lesions and to the low percentage of infections the result is striking when contrasted with what occurs on inoculation of chancres, condylomata, or secondary syphilitic papules. By using several rabbits I have usually succeeded with every specimen of the latter, while I have been successful with only one specimen of brain out of six employed. The disparity is probably connected with the small number of *pallida* present in the brain tissue, although it may be due to a low degree of infectiousness of the brain spirochetes for the rabbit. The percentage (17) however, is about that (25) in which the *pallidum* has been detected by histologic methods in the brains of paretic individuals. A full report on this subject is to appear in a forthcoming number of the *Journal of Experimental Medicine.*

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*From the Laboratories of The Rockefeller Institute for Medical Research.

[1] Noguchi and Moore: A demonstration of *Treponema pallidum* in the brain in cases of general paralysis, Jour. Exper. Med., 1913, xvii, 232.

[2] München. med. Wchnschr., 1913, lx, 737.

in the stomach. No tremor, no nervousness, no tachycardia. Right lobe of thyroid size of a large almond with shell on. June 26, 1912, 170 minims injected into right lobe. Pulse at time of injection 84. Feb. 8, 1913, feels well; no further enlargement of right lobe. Neck was sore and stiff behind the sternomastoid for a week after the injection.

CASE 4.—Miss L. S., aged 22, seamstress. Maternal aunt had goiter. Always nervous girl. Lowered strength and vitality for two years. One and one-half year ago complained of feeling tired and having distress in region of heart. Six months ago noticed prominence of right eye and tremor of hands. Swelling of legs and ankles at times. Weight 116. Pulse 140, small volume. Exophthalmos of right eye. Edema of legs. Tremor of both hands. Diffuse goiter rather low. May 10, 1912, 150 minims into right lobe. Pain in back of head and neck and in back of ear at site of injection. Very nervous. May 23, 1912, 200 minims in left lobe, 120 in right. Exophthalmos better. Injections did not cause much distress. June 13, 1912, 180 minims in right lobe, perhaps on top of capsule. Eyes protruding a great deal. Left lobe of thyroid swollen. Right lobe not so marked. Very nervous. Right side of neck tender at point of former injection. Pulse 128 after injection. June 28, 1912, weight 128 pounds (a gain of 12 pounds); exophthalmos much better. Pulse 132, stronger and more regular. Injection of 180 minims made into right lobe at isthmus. Went to the Pacific Coast on a visit and has not been heard from since.

CASE 5.—Mrs. E. R. V. D., aged 41. Heart fluttering for four years. Tremor for eighteen months. Dyspnea on exertion. After three weeks in bed much better. No tremor, but there had been previously. Right lobe of the thyroid enlarged to the size of a hulled walnut. No eye symptoms. Weight 135½ pounds. Slight edema of legs. Marked cardiac arhythmia with enlargement. May 5, 1912, 60 minims injected May 17, pulse very arhythmic, about 60; 120 minims injected with considerable pain. May 29, 1912, 50 minims in region of isthmus. Goiter entirely disappeared except slight enlargement of isthmus, possibly due to thickening of tissue covering gland. Subsequent history not at hand. Physician does not know about her present condition. Letter Feb. 9, 1913, says "derived a great deal of benefit."

CASE 6.—Miss J. H., aged 26, weight 86 pounds. Excessive tachycardia and tremor. Pulse 140 to 150. Condition too poor for operation. July 30, 1910, two injections, 120 and 125 minims, into right and left lobes. Aug. 5, 1910, three injections, 80, 100 and 120 minims. First two in right lobe, third in left. August 17, three injections, 90, 120 and 160 minims. First two in left, third in right. Injections September 8, September 27 and October 20, the exact amounts not known. December 8, two injections, 100 and 120 minims, in the right side. March 2, 128 minims injected. March 9, 90 minims injected. Patient gradually improved; blood-pressure dropped from 180 to 150. Pulse dropped from 140 and 150 to 90 and 100. Weight increased to 145 pounds, and she seemed in good enough condition to warrant operation. Operation was performed May 16, 1911. During the convalescence patient suffered a hemiplegia, apparently due to hemorrhage dependent on arterial degeneration attendant on the toxemia from the hyperactive thyroid. Patient recovered, however, and is now in comparatively good health; weight over 130 pounds. Exophthalmos slight; patient somewhat nervous, but otherwise well. The heart, of course, remains considerably damaged.[1]

CASE 7.—Mr. J. M., aged 32, nervous, had pain in occiput and insomnia; thyroid gland enlarged for last twelve or fourteen years. Heart slightly enlarged, otherwise normal. Two injections, 5 c.c. each, in July, 1910, into isthmus and right lobe, this being one of the very first injections made on the human being. After-effects slight; consisted of a bulging sensation lasting for a few weeks. Patient thinks there was slight benefit derived. Examination later by Dr. Mayo. Patient was advised against operation, doctor thinking the gland was doing no harm.

CASE 8.—Miss E. H., Kendallville, Ind., aged 25. Tachycardia, nervousness, loss in weight; pulse 100. Thyroid distinctly enlarged. Injection of 40 minims into each of two lobes. Seemed benefited for two months, during which time her pulse ran from 68 to 80. Injection April 18, 1910. No further injections. Owing perhaps to a change in patient's address, I failed to get a late report.

CASE 9.—Mrs. S. Y., aged 41. Nervousness, tachycardia, thyroid hickory-nut size. Nov. 29, 1911, 100 minims injected into right lobe. Dec. 22, 40 minims injected into right lobe, which was reduced in size. Pulse 96. Jan. 4, 1912, very small nodule remains. No injections. Jan. 20, 1912, pulse 94 after walking up stairs. April 17, 1912, 30 minims injected. Pulse 80 before and afterward. Very much improved in every way. Now on trip to Europe. Salvarsan injection April 18, 1912; no serious after-effects.

CASE 10.—Mrs. R. S. Blood-pressure 160 to 140. Pulse 120. Injections of 45 minims into isthmus. Later note says that she has improved in every way, with increase in weight. No details given.

CASE 11.—Mrs. J. S., aged 45. Complaint, weakness, tired feeling, tachycardia, dyspnea on exertion, "nervous spells" "apparently beginning" in stomach and then going all over her with nausea, extreme nervousness and weakness. Pulse 100 to 110. Injection of 50 minims into the right lobe in two places. Pulse afterward 72 to 85. April 29, 1912, feeling fine. Pulse 80. Thyroid smaller. July 30, 1912, pulse 75 to 100 after a walk to the hospital. Jan. 2, 1913, patient says she has been markedly benefited but is still troubled at times.

CASE 12.—Mrs. G., aged 55. Complaint, tachycardia and nervousness. Nov. 29, 1911, 60 minims injected into right, 60 minims into left lobe. First injection hot air. Dec. 6, 1912, 120 minims injected into right in two places, 60 minims into left. December 22, four injections, each of 55 minims. One of the two injections in left followed by hematoma and fluid in syringe colored; two injections in right lobe, first possibly on top of capsule. Pulse 130 to 110 before injections. Dec. 31, 1912, patient considered herself cured.

CASE 13.—Mrs. H. Rapidly enlarging goiter. Section removed and pronounced by pathologist carcinoma. Neck reduced in size and drainage much less under x-ray treatment. July 20, 1912, injection at three points of 200 minims. Neck 15 inches in circumference. July 30, 1912, 160 minims injected middle, 160 minims right. Neck measures 14 and 11/16 inches. Weight 160½ pounds. Patient was choked to death by increase in size of gland five months after last treatment and ten months after onset of carcinoma.

CASE 14.—Miss W., seamstress, aged 30. Complaint, nervousness, weakness and tired feeling. Moderate tachycardia. Two injections July 3, 1912, 90 minims in right lobe; July 6, 100 minims into right lobe without benefit. January, 1913, still has same symptoms as before. Thyroid in this case very slightly enlarged, scarcely more than palpable right lobe.

CASE 15.—Mrs. W., aged 55, in the hospital with a pulse of 180, arhythmic, bruits, etc. Markedly enlarged thyroid of fifteen years' duration; many severe attacks with intermissions. Edema to waist. Complete orthopnea for three months. With rest in bed edema disappeared and heart quieted a little. Oct. 18, 1912, 210 minims injected in each of two points in large lobe. Oct. 25, 1912, 230 minims injected into right lobe above, 180 minims lower down. Neck was smaller, heart more regular, somewhat slower; edema entirely gone. Patient is now fairly comfortable. She has not yet returned for further injections.

CASE 16.—Miss W., librarian. Symptoms, tremor, tachycardia, nervousness, slightly enlarged thyroid. One injection given. Patient symptomless ever since, now over a year. There was amenorrhea in this case for three months. Patient now menstruates regularly.

CASE 17.—Mrs. K. Nervous all her life. Some tachycardia. Pulse ranging near 100. Thyroid larger fifteen years ago than at present. Some pain in chest. No exophthalmos. Feb. 26, 1912, 60 minims injected through two punctures. Jan. 16, 1913, much less nervous since injection, less palpitation and tachycardia; not altogether free, however. Operation done about the same time for salpingitis. Has gained 12 pounds in weight.

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[1] This case was reported in detail in THE JOURNAL A. M. A., Sept. 11, 1911, p. 1120.

Case 18.—J. W. K., aged 52, farmer, fairly well until last three months, when he commenced to feel weak, short of breath and very nervous; has had severe pain in left shoulder, lost weight, had goiter for twenty years; pulse 122, marked tremor, no eye signs. Right lobe size of hen's egg; isthmus size of hulled walnut. Isthmus more firm than right lobe. Boiling water injected, 230 minims at each point, Nov. 25, 1912. Dec. 26, 1912, two injections principally into isthmus and right lobe, 230 minims each. Dec. 24, 1912, 220 minims injected into right lobe, 220 minims into isthmus, similar injection into left lobe. Subsequent history not obtained. Feb. 12, 1913, patient says he is "getting along fine" and thinks he may not need any more treatment.

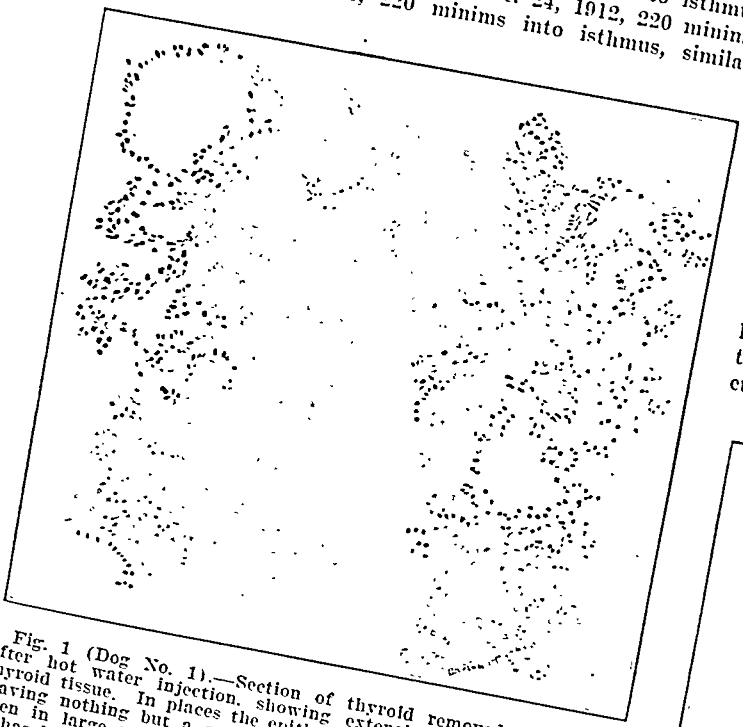

Fig. 1 (Dog No. 1).—Section of thyroid removed immediately after hot water injection, showing extensive destruction of the thyroid tissue. In places the epithelial cells are entirely destroyed, leaving nothing but a connective-tissue network. The colloid has been in large part dissolved and where not completely dissolved, it has been so altered that it no longer takes the eosin stain well. This figure and Figures 2 and 3 were drawn with camera lucida, Leitz obj. 6, oc. 3.

Case 19.—Mrs. J. W. D. Swelling in neck for twenty-five years. Past year has noticed palpitation of the heart; has had no flushes or nervous manifestations; has large asymmetrical swelling extending from wall through on neck 21 cm. wide and 9 cm. long; no exophthalmos; pulse 96. Nov. 26, 1912, 120 minims boiling water injected, 60 minims on each side. Dec. 6, 1912, 250 minims injected into right lobe and 250 minims into isthmus. Dec. 11, 1912, neck measures 15¾ inches, pulse, sitting, 78. Patient thinks heart is better.

Case 20.—Mrs. C. W. (Dr. Beall) complains of nervousness, tachycardia, slight exophthalmos, some dyspnea, of three months' duration. Menstruation not disturbed. Patient has had noticeable goiter for years. Injection June 24, 1912, 120 minims into right lobe. July 24, 1912, 120 minims injected into right lobe. Pulse 98. Marked improvement; patient comfortable ever since.

Case 21.—Mrs. X., (Dr. Beall) first seen in October. Tachycardia, pleurisy and negative tuberculin reaction. Thyroid began to enlarge in November. January 7, 150 minims injected into right lobe. 35 minims into isthmus. Some improvement. Patient can now do some work though she was incapacitated before in spite of rest, bromids, digitalis, ice to the neck, etc.

Case 22.—Mrs. X. (Dr. Duemling) has very large goiter, marked myocardial degeneration, severe arhythmia and tachycardia. She is adjudged too sick for operation after forty-one days' routine treatment in bed. Following the injection of 20 c.c. of hot water the pulse dropped to 84. General condition seemed markedly improved. The improvement continued for a week, when the patient left the hospital without further treatment.

PROTOCOLS OF EXPERIMENTS

Dog 1 (Dr. W. D. Gatch).—Operation Feb. 15, 1913; subject, a very large, slate-colored dog of the mongrel type. Under ether anesthesia both lobes of the thyroid were exposed through a mid-line incision in the neck. Several cubic centimeters of hot water were injected into each lobe, the needle being accurately inserted into the middle of the gland. The gland, following the injection, at first became blanched, but soon changed to dark blue color from the formation of a hematoma. It swelled to two or three times its normal size. The wound was carefully closed and healed by first intention. The dog, following this experiment, has shown no change in its general condition. It appears normal in every way.

Dog 2 (Dr. Gatch).—Operated on Feb. 15, 1913. Subject was a small red mongrel dog. The operation was the same as in Dog 1, and the changes following the injections of hot water were the same. In this dog, however, half of the right lobe was excised, and placed immediately in 10 per cent. dilution of liquor formaldehydi. The hot water exuded from the cut surface of this lobe. On section the excised piece of tissue had the appearance of a piece of meat dipped in hot water. Healing was by first intention.

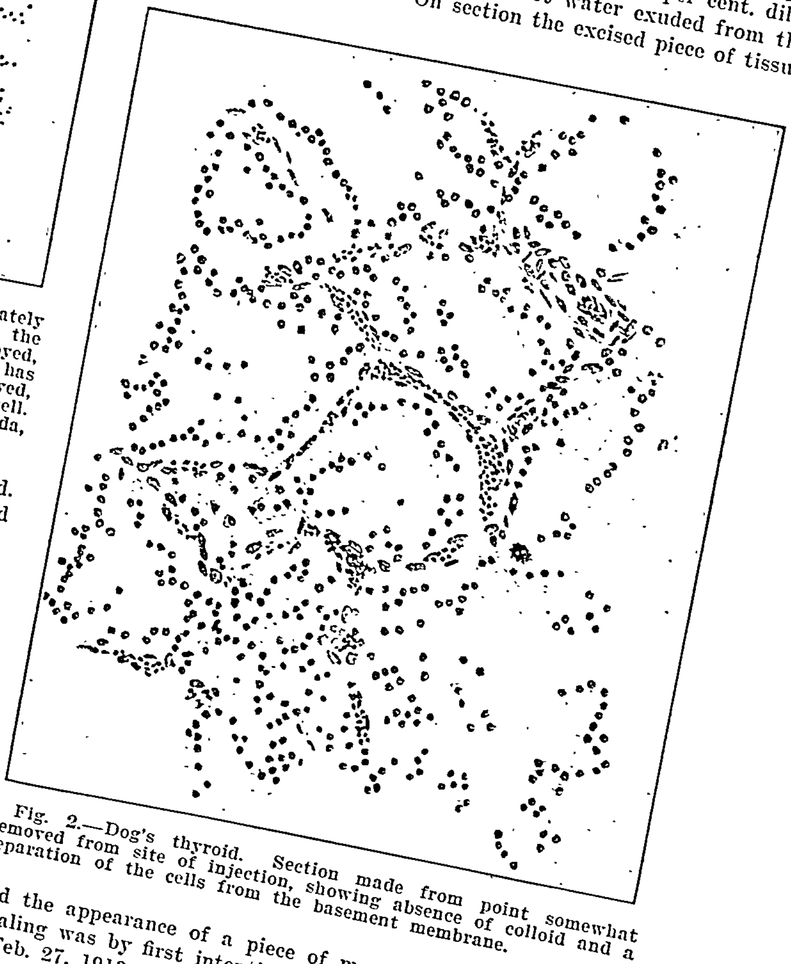

Fig. 2.—Dog's thyroid. Section made from point somewhat removed from site of injection, showing absence of colloid and a separation of the cells from the basement membrane.

Feb. 27, 1913: The dog was found dead this morning. It had been somewhat torpid, and had not taken food well since the operation. It had shown, however, no very definite symptoms.

Necropsy: The right lobe of the thyroid measured about 1.5 by 0.5 by 0.5 cm. This was about half or less than half its normal size. It was slightly adherent to the surrounding structures but was easily removed entire. Its gross appearance was that of a lymph-node. On section it was found to be of a pale, whitish color. Only a few small pieces of the right lobe of the thyroid could be found. The dog was somewhat emaciated but the necropsy showed all organs with the exception of the thyroid to be normal.

A normal section (from a piece of thyroid excised at operation) shows extensive destruction of the thyroid tissue, in places the epithelial cells being entirely destroyed, nothing but a connective-tissue network remaining. The colloid material has been in large part dissolved and where not completely dissolved, has been altered so that it no longer takes the eosin stain.

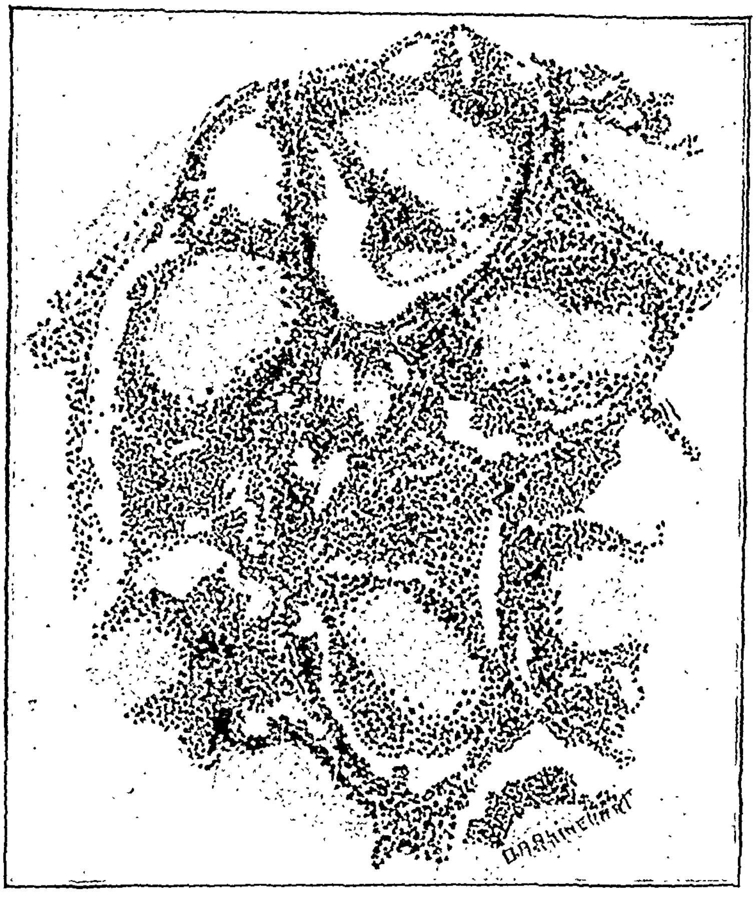

Fig. 3.—Dog's thyroid. Section made at point of injection showing complete destruction of gland-cells, partial destruction of colloid with filling of acini with red blood-cells.

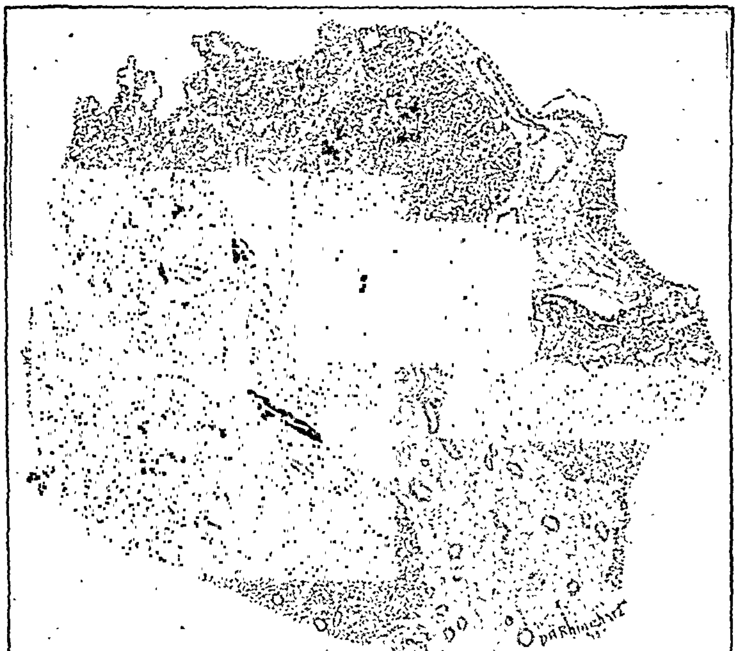

Fig. 4 (Dog 3).—Killed eight weeks *after* injection of thyroid with hot water. Gland removed and sectioned. Note the great amount of fibrosis and small amount of colloid.

A second section (from a lobe obtained at necropsy) shows, I *think*, a remarkable picture. The colloid here is almost entirely gone with the exception of one small area where the colloid is preserved, but the cells are entirely necrotic. The pieces of glandular tissue have been entirely replaced by fresh connective tissue and in spots where the epithelial cells remain they show extensive degeneration and detachment from the basement membrane. The alveoli do not contain colloid.

It is possible, of course, and I think quite probable, that the thyroid cells left intact after injection might hypertrophy and supply the demand for thyroid secretion. This is probably what happened in the first dog. The adhesions following the injections were slight and no more extensive *than* you would expect from dissecting the gland out of its bed and then replacing it. Care was taken, however, to get the hot water inside the capsule.

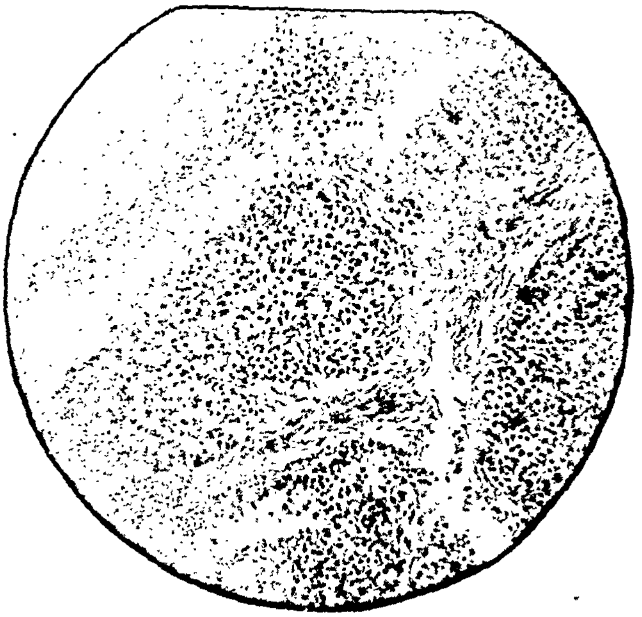

Fig. 5.—Section of thyroid removed from female patient after treatment by injections of hot water. Sections made four months after last *injection* and ten months after first. The prevailing picture is one of connective tissue hyperplasia. Note the thick strands of *cicatricial connective* tissue constricting and compressing the parenchyma, thereby completely obliterating the gland structure. ×265. (B. W. Rhamy.)

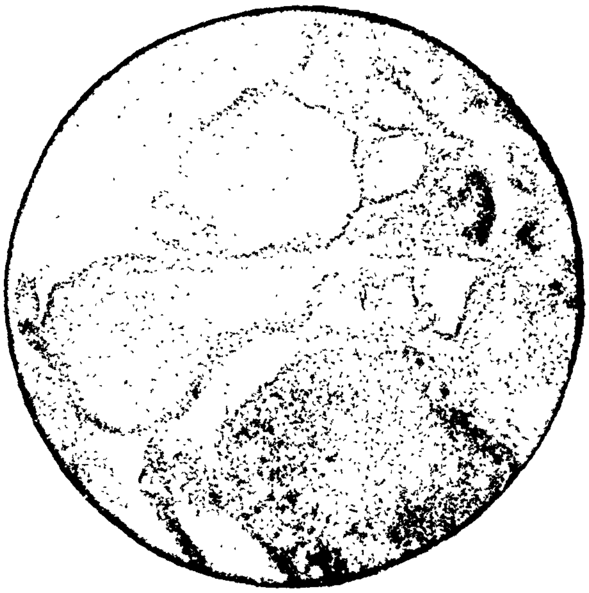

Fig. 6.—Case of exophthalmic goiter in female, aged 35. Thyroid was removed, and soon thereafter the *gland* was *injected* with about 200 minims of boiling water. Microscopic examination of the part thus treated shows some necrosis of the epithelium here and there, with absence of the colloid substance *in some of the* alveoli and loss of its staining characteristics in others. Many of the alveoli are distended, and the interstitial connective tissue is slightly edematous. (B. M. Edlavitch.)

Dog 3 (Dr. Gatch).—Killed eight weeks after injection of thyroid with hot water. Gland removed and sectioned. Sections of thyroid are especially interesting on account of the great amount of fibrosis and very small amount of colloid substance. (Fig. 4).

Dog 4 (Drs. C. G. Beall and H. K. Mouser).—Weight about 25 pounds. Forty minims of hot water were injected under ether anesthesia. No change in dog's clinical condition. Three weeks later, by same method, 60 minims were injected into the left lobe. No change except that the dog became somewhat thinner. Dog disappeared.

Dog 5 (Drs. Beall and Mouser).—Right lobe injected with 40 minims. In two weeks a second injection was given. The dog died from overetherization. The thyroid was removed and examined microscopically by Dr. Beall. The examination shows that the gland tissue at the site of the injection has disappeared, being replaced by connective tissue.

Dog 6 (Drs. Beall and Mouser).—About three months old, rather small, with a marked goiter. Both lobes injected (spring of 1909). Goiter disappeared almost entirely. The dog was still living and remained free from goiter at the end of four years.

207 West Wayne Street.

THE RELATION OF GASTROSTOMY TO INOPERABLE CARCINOMA OF THE ESOPHAGUS

WITH A DESCRIPTION OF A NEW METHOD OF PERFORMING GASTROSTOMY *

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Many surgeons never perform gastrostomy for the relief of malignant stenosis of the esophagus on the ground that it rarely prolongs the lives of patients in a satisfactory manner and contributes little to their comfort. The artificial feeding through the abdominal wall, even if the patients are permitted to chew their own food, is viewed as so unnatural and disgusting that the increased length of life secured thereby is not considered desirable. In my experience, a larger number of physicians and surgeons advise postponing a gastrostomy until it becomes impossible for the patient to swallow solid food any longer. In general, every attempt is made to postpone gastrostomy as long as possible.

Experience with gastrostomy, however, by those who have had opportunity to study the postoperative history of patients properly selected has proved that it does prolong life, and for a long time in many patients contributes considerably to their comfort. But experience also demonstrates that, in order to secure the best results from gastrostomy, it should be done early, not postponed until the very last minute, as is too often the custom. It is a mistake to allow these patients to become emaciated from inanition. If they are allowed to become thus weakened, it is often impossible to build them up again through the aid of a gastrostomy, or to enable them to survive the cancer for so long a time as if the operation had been performed earlier. It often happens that the course of malignant disease of the esophagus is favorably influenced by the rest afforded by relief from the stretching caused by deglutition. It has frequently been noticed that a carcinomatous esophagus has again become pervious after the rest afforded by a gastrostomy.

Among the objections urged against early gastrostomy are the considerations that the opening may leak; that the new fistula which leads to the stomach is permanently lined with granulation tissue and hence occasions some discharge; that from both these causes there may be some irritation of the skin in the neighborhood of the opening and, finally, that the necessity for the constant wearing of a tube is annoying. The early performance of a gastrostomy does not, of course, mean that the patient is placed immediately on catheter life, provided the above objections can be met. As long as the natural opening remains pervious to fluids, liquid can be taken by the mouth whether the gastric fistula is present or not, and the natural opening doubtless remains pervious longer with than without a gastrostomy opening.

The most serious of the objections to an early gastrostomy is the danger of leakage. Certainly, if the artificial fistula leaks, the excoriation of the skin from the contents of the stomach is considerable and is very distressing.

A number of methods, therefore, have been devised in order to prevent this contingency. That of Witzel,[1] has proved frequently unsuccessful. The method of Frank[2] is also often unsuccessful and very wasteful of the stomach-wall. In fact, with a small contracted stomach it is impossible to perform this operation. The method of Senn,[3] however, has proved successful in the hands of a number of surgeons. Moynihan and Robson consider it the best method, and recently Senn has collected reports of ninety-three cases of gastrostomy performed by this method in which leakage occurred in only two cases. The principle of the Senn method consists in the formation of a cone-shaped circular valve protr ing into the cavity of the stomach and formed reduplication of the stomach-wall around a tube intr duced into the cavity of the stomach, the base of th cone being sutured to the parietal peritoneum. The crater of the cone then comes together around the tube within the stomach and prevents leakage. Kader[4] had modified this method by forming two lateral lips projecting into the stomach instead of a cone. This method, however, is not so serviceable in that it is more wasteful of the stomach-wall. As regards the prevention of leakage, the Senn method, therefore, may be considered as the most satisfactory method of gastrostomy hitherto published. In all operations in which artificial valves are formed, however, there is a tendency for the valves to diminish in size and effectiveness as time advances. This objection, probably, could not be urged against the Senn method when the operation is performed for the relief of carcinoma of the esophagus, as the valve doubtless remains efficient as long as there is any need for it. It might, however, become an objection in patients in whom it would be necessary to establish a permanent gastrostomy opening, as in a patient who might be expected to live indefinitely. Such permanent fistulas are sometimes, though rarely at present, indicated.

The establishment of a permanent fistula necessitates providing the fistulous tract with an epithelial lining. Without such lining two disadvantages, already cited, are present. The first is the constant presence of some discharge from the granulating tissue forming the fistulous tract. The second is the necessity for always wearing the gastrostomy tube. Perhaps the necessity for keeping the catheter in place may not exist in all cases, but in my experience it has seemed to be necessary and others have found it so and commented especially on it.

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* From the Laboratory of Experimental Surgery, New York University and Bellevue Hospital Medical College.

[1] Witzel: Centralbl. f. Chir., 1891, xviii, 601.

[2] Frank: Wien klin. Wchnschr., 1893, vi, 231.

[3] Senn, Emanuel J.: Gastrostomy by a Circular Valve Method, THE JOURNAL A. M. A., Nov. 28, 1896, p. 1142.

[4] Kader: Centralbl. f. Chir., 1896, xxiii, No. 27, p. 665.

The creation of a gastric fistula which will not leak and which is lined throughout with epithelium and which, therefore, will neither discharge nor spontaneously close, appears to me to offer decided advantages. Such a fistula communicates with the skin surface with a meatus-like orifice and can be used or not as the patient wishes. It causes absolutely no inconvenience, and consequently can afford no reasonable argument against its early establishment in malignant disease of the esophagus.

The creation of such a fistula leading to the stomach is readily accomplished by a method which I have developed in dogs in connection with experimental removal of the entire esophagus. The fistula has worked so well in dogs, not leaking even during vomiting or barking, that I have used the same technic with equal success on five human beings during the past year. The operation is similar to De Page's[5] gastrostomy, with which I was unfamiliar at the time of the experimental development of my own procedure. Whether the operation to be described be viewed as merely a modification of De Page's method or as sufficiently different to warrant its being designated as a new procedure, matters little. It is of importance only to call attention to the principle as the most desirable one for the establishment of a permanent gastric fistula.

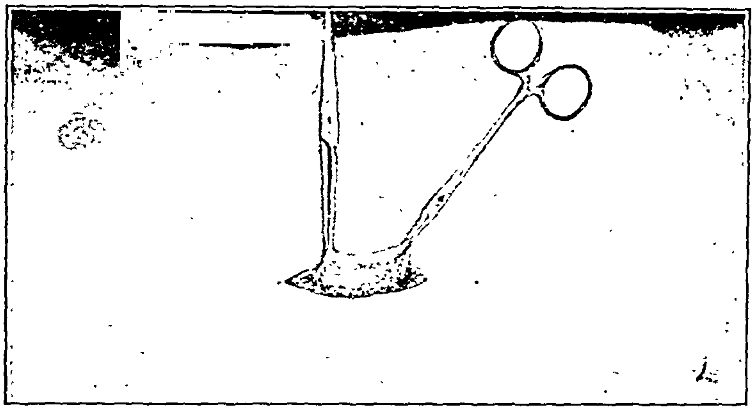

Fig. 1.—Nipple of anterior wall of stomach delivered through abdominal incision. Line of dashes indicates line of incision.

The operation may be performed under local anesthesia and requires an incision of only 3 cm.

This incision is made parallel with the rectus fibers, over the inner third of the left rectus muscle a short distance (3 or 4 cm.) below the costal cartilage. The fibers of the rectus are not divided, but separated bluntly. Its posterior sheath is divided and the peritoneal cavity entered. The anterior wall of the stomach is now pulled out through the wound. This nipple of stomach-wall is then held to the left by two clamps (Fig. 1).

An incision from 3 to 4 cm. long is then made between the two clamps. Two short perpendicular incisions 1 cm. long, extending toward the greater curvature, are then made at each extremity of the first cut. The flap *C E G F* created by these incisions, *F G*, is then folded over to the left and *A* is pulled down to the right. By this procedure the opposite margins indicated by the letters *F C B A* and *G E D A* are approximated, and when sewed together form a tubular canal (Fig. 3). In this manner a long canal is created in the stomach-wall, at least 5 cm. long, without diminishing the transverse diameter of the stomach.

Near its base this canal is then sutured to the parietal peritoneum and to the posterior sheath of the rectus. Its apex end is sutured to the skin of the abdominal wall. The operation is a less extensive plastic procedure than that devised by De Page. It can easily be performed on a small nipple of stomach-wall delivered through a very short incision. Much less of the stomach-wall is used up in the creation of the new canal than in De Page's operation. Moreover, in the above-described method the suture-line is placed on the upper surface of the tubular canal, thus subjecting it to less strain from the weight of the filled stomach. Furthermore, the small plastic flap receives its blood-supply from the greater curvature. This consideration is of greater importance, if there are metastases of the lymph-nodes in the lesser omentum. The formation of such a canal in no appreciable way alters the shape of the stomach. Instead of being narrow or constricted at the region from which the new canal is made, the stomach contour is unchanged.

De Page's operation has been described by Robson as a complicated procedure, but certainly the steps of the smaller operation which have been here outlined are not complicated and can be performed on a very small portion of the stomach-wall with the aid of local anesthesia alone.

The operation results in the formation of a long canal from three to four times the length of the two short incisions at the extremities of the first cut. As already mentioned, the effect is to cause the stomach-wall, at the place where the tubular canal is formed, to lengthen out in a surprising manner. The split rectus fibers come together around this canal and act like a sphincter.

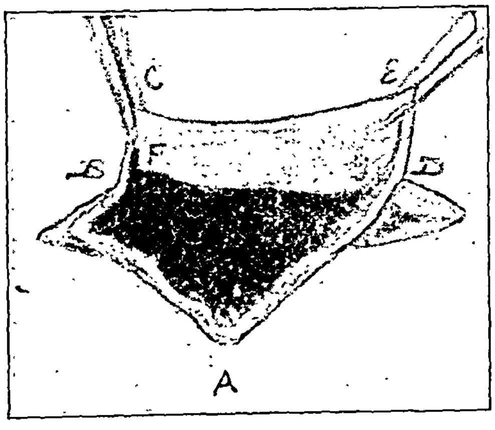

Fig. 2.—Opening into the stomach made by the incisions through the stomach-wall.

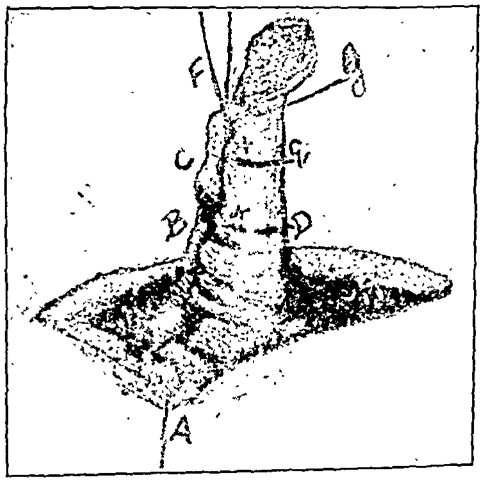

Fig. 3.—New canal, tubular in shape, formed by after-suture of plastic procedure shown in Figure 2.

The anchoring of the new canal in place may be accomplished in two ways: either the base of the new canal may be sutured to the margin of the rectus sheath, as previously explained, or the inner extremity of the canal may be inverted a short distance into the cavity of the stomach. By this procedure a circular valve is created, as in the Senn method of gastrostomy. Although the addition of this valve furnishes an increased safeguard against leakage, it may be omitted and good after-results obtained. Of much more importance than the creation of a circular valve at the inner extremity of the new canal, in fact the essential feature of this operation, is the direction given to the new canal by the selection of an area of the stomach-wall for the performance of this plastic procedure somewhat to the right of the abdominal incision. The new canal, when formed, should have an oblique direction to the left. Any increase of intragastric pressure will then bring the walls of the fistula together and effectually prevent the escape of stomach contents.

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[5] Jour. de Chir., 1901-1902, i, 715.

I have performed gastrostomy five times as detailed above and always without inverting the proximal end of the new canal. In other words, in five patients I have simply sewed the new canal near its base to the margin of the opening in the rectus sheath and the mucous membrane of the external opening of the canal to the skin, depending entirely on the constricting influence of the rectus fibers and the oblique direction of the new canal for tight closure. In three of these patients the malignant disease was so far advanced that they did not survive the operation long enough (three or four weeks) to be up and around, and there was no opportunity, therefore, to test the tightness of the new canal in a satisfactory manner. These three patients occupied a recumbent position all of the time after operation. There was not a drop of leakage in any of them. Of the two other patients, one lived a sufficient length of time after the gastrostomy to be up and around as a normal individual, and he had no leakage. The fifth patient is still living. He has had leakage only on severe exertion. Such leakage, however, has been inconsiderable and the patient has been in the habit of controlling it by inserting a soft rubber stem pessary when going to work (he is a carpenter). For the past three months he has been unable to work and has omitted the use of the pessary altogether.

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SALVARSAN VERSUS PROFETA'S LAW *

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The theory of syphilitic immunity, as established by Ricord, has long been upset. If there is a syphilitic immunity in infected persons this is due to two circumstances combined: first, to a saturated condition of the fluids and solids of the organism with spirochetes and their toxins; second, to the capacity of the organism to produce antibodies to counteract the poisonous influence of the virus. With time the spirochetes become inactive and the disease, in a latent condition, loses its poisonous influence. The Wassermann test in these conditions turns negative, and yet the patient is not cured, and may show syphilitic signs of a late type. The attenuation of the virus is seen also by the observation of syphilitic families, when we see the first pregnancy end in miscarriage, the second in premature birth, the third child born alive, and only after a few days showing some syphilitic manifestations, and others born well, showing only late, faint signs of the disease.

The diminution in the poisonous intensity of the virus occurs slowly and at times in a saltatory way. In some syphilitic families a healthy child is born, and the next child will show signs of hereditary syphilis.

I shall repeat my statement, made at other times, that the spirochetes in the organism of the father, after a certain time and after some treatment, are unequally distributed, hiding themselves in those organs and those tissues which are not so easily affected by the antisyphilitic remedies. Whether an infected or a healthy child is born to him may depend on the presence of the spirochetes in the semen.

It is exceedingly rare and difficult, however, to find that the mother who gives birth to a syphilitic child is not infected with syphilis. The Wassermann test of to-day has already destroyed Colles-Baumes' law. They claimed that mothers bearing syphilitic children from fathers affected with latent syphilis escape the disease, or at least pass through a modified form of it. Their children, affected with mucous patches on the tongue or the lips, suckle the breast of the mother without infecting her; but if they were to suckle the breast of any other healthy woman, she would be positively infected.

Montesano[1] writing on Colles' law reported a case of a woman, who returned, after four years' separation, to live with her husband who had been infected. She became pregnant and gave birth to a child apparently well. She never had any signs of syphilis until two years later. Then the child was taken with epileptiform spasms and the mother had ulcerative patches between the toes. Wassermann test of both the mother and the child proved to be positive. The woman had been declared immune according to Colles' law, and yet she had a latent syphilis. The immunity of the mother who has in her uterus a syphilitic fetus is only ephemeral. She has not escaped infection as Ricord claimed, but has latent syphilis.

Profeta's law[2] maintains just the reverse of what has been asserted to happen to the mother and to the child. It was maintained under his theory that this child coming from syphilitic parents has acquired a congenital immunity, which protects it, at least temporarily, from syphilitic infection. This occurrence was explained in two ways: either that the placenta would be able to oppose a strong barrier to the entrance of the spirochetes, protecting the fetus mechanically, or that the child, saturated with antigens arising from the system of the mother, would be protected and immunized from subsequent infection.

Profeta's law had a strong support in a series of observations from Profeta[3] himself, and later from Caspray, Finger,[4] Ogilvie,[5] Bruggeman and Glück.[6] But in recent years exceptions have multiplied to such an extent that I must agree with Matzenhauer[7] that it has no more reason to be called a law.

To-day we can say that there is no congenital or hereditary syphilis without syphilis of the mother. Immunity, either active from the passage of toxalbuminous substances, or passive from antigens passing from the mother to the fetus or vice versa, can no longer be maintained.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Montesano, V.. Osservazioni sulla legge del Colles, Report Soc. ital. di dermat. e sifil., 1913.

[2] Profeta, G. Sulla sifilide per allattamento, Sperimentale, 1865.

[3] Profeta, G.: Variazioni su motivi di sifilide congenita per allattamento, Gior. ital. d. mal. ven. Milano, 1900, p. 165.

[4] Finger: Ueber die vererbte Syphilis, Finger Arch.

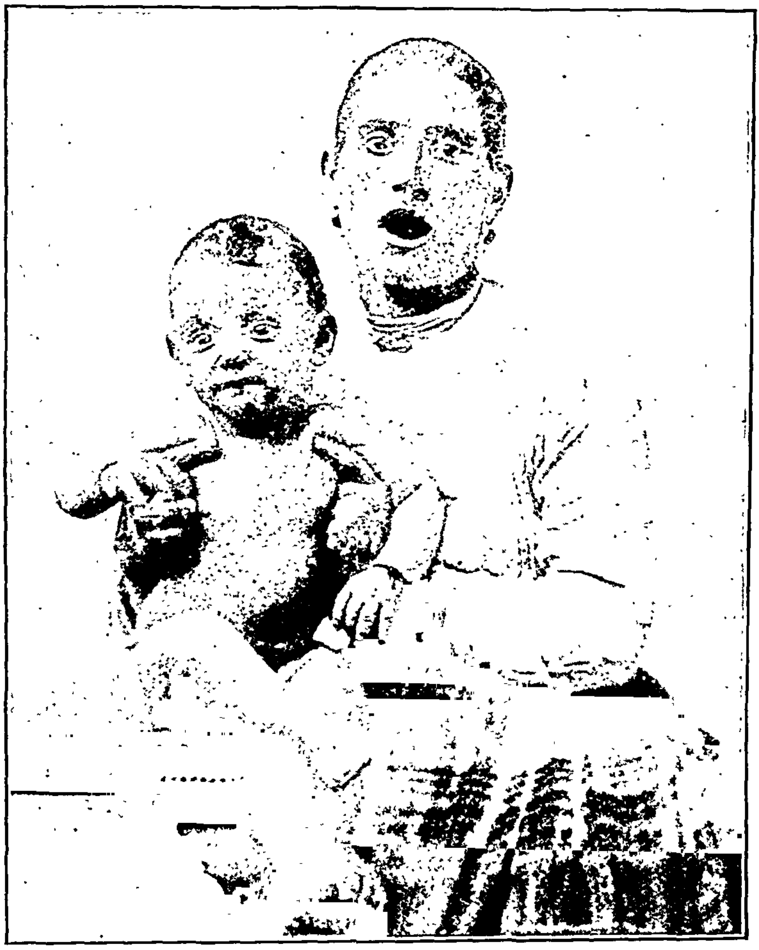
[5] Ogilvie: Congenital Immunity to Syphilis and the So-Called "Law of Profeta." Brit. Jour. Dermat., 1899.

[6] Glück: Ueber das sogenannte Profetasche Gesetz, Deutsch. med. Wchnschr., 1902, No. 9.

[7] Matzenhauer, R.: Die Vererbung der Syphilis, Ergänzungsheft, Arch. f. Dermat. u. Syph., 1903.

After these observations I shall refer to the clinical case, the subject of my late study and the motive for this paper.

Patient.—An Italian laborer came to consult me for a lenticular papular syphilid with all the accompanying symptoms. Injections of gray oil were given and the eruption was gradually disappearing and the man was feeling much better. He was not seen for some time until he came with his wife, who had recently come from Italy to join him. He had infected his wife, of course, and she also had papular syphilid. It was at the beginning of the new era of treatment, the salvarsan, which had to accomplish the *sterilisatio magna,* and both husband and wife were treated with two intramuscular injections in the lumbar regions with a full dose of 0.6 gm. After the injection both improved remarkably. The woman was in the beginning of pregnancy. Her husband had not shown any symptoms since the injections; Wassermann and Noguchi tests were found negative. The woman could not be induced to have a Wassermann test made. She had one necrotic abscess in the place of one of the salvarsan injections, which healed up in a short time after due treatment. For some time I lost sight of this couple. The woman came again with a well-nourished, well-developed baby 8 months old, which when carefuly examined showed no signs of lues. She related that the pregnancy at the time of the syphilitic manifestations ended in miscarriage. Since the salvarsan injections she had seen no signs of the infection, and she had given birth to the child she had in her arms. She came on account of a sore under lip, which was touched up with a solution of bichlorid 1:100 in alcohol and ether. The sores in her mouth were undoubtedly mucous patches of the mucosa. A few weeks later she came on account of the child, who had an initial lesion on his chin, as shown by the illustration, with enlargement of the submaxillary and cervical lymph-nodes. At the same time the face, chest, back, arms, thighs and legs were covered with a macular syphilid (roseola). I had the picture taken to show the mucous patch at the right corner of the mouth of the mother, and the initial lesion on the left of the chin of the child.



Lesion on left side of baby's chin, and mucous patch in right corner of mother's mouth.

COMMENT

The child was perfectly well and had never shown any sign of luetic taint. The father, with the mercurial treatment and after the salvarsan injection had shown no further symptoms, had negative Wassermann, and was able to generate a child free from lues. The mother, also, showed no signs of lues for some time and it seems that the active spirochetes were killed. I would say, with Pollitzer, that some of the inactive spirochetes still remained in her tissues, and were not allowed to pass through the placentary filter. This case gives no support to the idea of Matzenhauer that the fetus receives infection from the mother only; it would rather maintain the opinion of Hainiss[8] that the cause of hereditary lues is the infected sperm.

The father had shown no symptoms for a long time, the Wassermann test had been negative, and he did not communicate the disease to the offspring. The mother, at the time of conception, although still having spirochetes in her system, did not communicate lues to the offspring. Some months afterward she showed mucous patches of the mouth. The receptivity of the infection by the child shows that he had no immunity whatever and his own mother with her saliva containing spirochetes in a maternal kiss inoculated him. The result was an initial lesion, and secondary eruption. If the Profeta law had any bearing the mother could never have inoculated her child, because it would have been protected by immunity.

Immunity in syphilis does not exist, and when a child born from a syphilitic mother is not infected that shows that he has latent syphilis, which sooner or later will manifest itself. In all cases of doubtful condition of infection examined by Linser,[9] Wassermann was found positive. I must state with Bergrath[10] that children are born either infected or healthy. Immunity does not exist, and what had been considered as immunity was only a latent condition of the disease.

Immunity against a reinfection is produced only by the existing syphilis, while immunity after perfect recovery, according to the experiments in animals carried on by Neisser, has to be entirely excluded. When syphilis is cured any immunity disappears. Moreover, while the disease is attenuating gradually, according to Finger, slight reinfection may occur.

I can state, therefore, that the child was perfectly free from syphilis. It is necessary to admit that the father was cured of syphilis. The mother was not cured because she showed later syphilitic mucous patches, but at the time of the pregnancy the spirochetes were not able to reach the fetus, which developed healthy and free from syphilis. The mother, neglecting treatment, allowed the spirochetes to become active again, and she showed mucous patches, which infected her child.

Since the use of salvarsan we have witnessed admirable results. Indeed, before the use of salvarsan cases of syphilitic reinfections were reported as of rare occurrence and were also questioned. After salvarsan, cases of syphilitic reinfection are numerous and every day increasing. Ascertained cases of syphilitic reinfections have been recently reported by Covisa and Nonell,[11] Mrongowius,[12] L. Jullien,[13] Belin, Milian and Amodrut,[14] Fournier,[15] Wüstenberg[16] and many others. This shows that by means of salvarsan, either alone or in association with the other antisyphilitic remedies, we obtain complete recoveries in syphilis.

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[8] Hainiss: Budapest Orv. Usag., 1912, No. 11; ref. Dermat. Wchnschr., 1912, No. 516, p. 1690.

[9] Linser: Sitzung des med.-natur. Verein Tübingen, February, 1909, quoted by Bergrath (see Note 10).

[10] Bergrath: Ueber Syphilis congenita in der II. Generation, Arch. f. Dermat. u. Syph., 1910, cv, 143.

Harold J. Levis[17] reported a case of severe syphilis in a woman who was in her fourth month of pregnancy. After two intravenous injections of salvarsan, she recovered and at full term she gave birth to twins in good health.

CONCLUSIONS

As a conclusion we can state that in the presence of the Wassermann test and of the administration of salvarsan, Colles-Baumes' and Profeta's laws have no right to existence. Syphilitic immunity lasts as long as the disease lasts, consequently the child in this case was born perfectly free from syphilis, although born from a woman who later showed syphilitic symptoms.

The opinion of Pollitzer[18] that salvarsan kills the active spirochetes and allows the inactive spirochetes to escape unaffected finds support in my case, in which the mother had conceived and carried to full term the child free from syphilis, when she still had spirochetes in her system.

In this family salvarsan had cured the father, had operated a great improvement in the condition of the mother, and had saved the child from maternal syphilitic infection.

348 Bryant Avenue.

ABSTRACT OF DISCUSSION

Dr. Alfred Schalek, Omaha: I believe that in the light of our present knowledge of syphilis, some of the laws regarding the transmission of the disease might well be regarded as obsolete. Statistics show that 100 per cent. of women with syphilitic children give a positive Wassermann, but the children of a syphilitic mother do not always show such a reaction. There is no acquired immunity in these cases, and I trust that the writers of text-books on the subject of syphilis in the future will revise these old ideas, which have been accepted and unquestioned for so many years.

Dr. M. L. Heidingsfeld, Cincinnati: The Wassermann test has largely cleared up the situation, and has demonstrated that the circulation between mother and child is so intimate that if one is infected the other almost necessarily shares the infection.

The very unique case reported by Dr. Ravogli, however, should be thoroughly investigated before we accept it at its face value, and there are certain features about it which should not be overlooked. In the photograph of the child there is a sore which might pass for an initial lesion. The eruption on the body is largely papular, and we know that in cases in which salvarsan has been used and a secondary eruption occurs, it is usually much earlier than in cases in which salvarsan has not been used. It is also possible that we have here a superadded infection, as described by Bingner. The possibility should not be lost sight of, therefore, that we are dealing here with a relapse rather than with a fresh infection. The indications point to a relapse or possibly some sporadic infection.

Dr. A. Ravogli, Cincinnati: In answer to Dr. Heidingsfeld I would say that this child was perfectly well, without any enlarged lymph-nodes, and showed no suspicion of syphilis. No Wassermann test was made at that time, therefore, as there were no indications for it. After the appearance of the initial lesion on the chin, however, there was no doubt in my mind that it represented a syphilitic infection, and improvement occurred under small doses of calomel, which is my usual treatment of syphilis in children. I am convinced that it was not a case of re-infection and that the infection came from the mother.

MESENTERIC CYSTS

WITH REPORT OF A CASE OF SANGUINEOUS CYST OF THE MESENTERY OF THE SMALL INTESTINE

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Cystic tumors of the mesentery are probably more uncommon than similar lesions of any of the other structures of the abdominal cavity. The difficulties of differential diagnosis in these cases, however, and the grave results when intervention is delayed too long behoove us to give more thought and attention to what was once considered one of the rarities of surgical pathology. Indeed, up to 1850 mesenteric cysts were recognized only at necropsy, and between 1850 and 1880, though occasionally operations were performed for so-called mesenteric cysts, they usually followed inaccurate diagnoses and terminated fatally. Even in 1883, Collet writes, in a very exhaustive thesis on this subject, that laparotomy for mesenteric cysts had never been performed up to that time after an exact diagnosis, the conflict arising sometimes over cysts of the ovary, omentum or sigmoid color, and sometimes over a small floating kidney, which was mistaken for a cystic tumor of the mesentery. We find the first description of one of these lesions given by Benevieni in 1507, while Ballonius, Hortius, Tulpius and other doctors of the seventeenth century mention similar affections, which they found at necropsy. These accounts, however, are very uncertain and confused. In 1886, Augagneur collected statistics which show that eighteen out of ninety cases (or 5 per cent.) of tumors of the mesentery were cystic. His work, together with the monographs of Braquehaye in 1892, and later of Moynihan and Dowd, and the efforts of the French surgeons, Péan, Millard and Tillaux, gave a new impetus to surgical endeavor in this field.

My attention was first directed to this subject by a patient who was referred to my clinic at the University Hospital by Dr. J. B. Keylor of Cochranville, Pa.

Patient.—C. B., aged 44, was admitted Jan. 14, 1913. He was married and had one child living and well, and denied all venereal disease. Eleven years ago, he fell through an opening in the barn floor, and in so doing pulled a corn-sheller after him which landed across his abdomen. During the next seven years, he suffered from time to time from attacks of colicky pains, but no nausea or vomiting, and no diarrhea or constipation. In 1909, he noticed a small mass the size of a walnut about 5 cm. above the symphysis pubis which slowly increased in size for two years until it extended 2.5 cm. below the umbilicus and laterally across the abdomen. During the past year, it has grown more rapidly and has extended 5 cm. above the umbilicus.

Physical Examination.—Starting about 3 cm. above the pubis, there arose a dome-shaped mass which extended 5 to 6 cm. above the umbilicus. It was hard, although with a certain amount of elasticity, and only attached around the umbilicus where it seemed to be adherent. It extended equally in each direction on both sides of the umbilicus, although it was a little more prominent on the right side than on the left. It was slightly movable, and its surface seemed to be quite even and not nodulated.

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[11] Covisa and Nonell Actas Dermosifilographicas, Madrid 1911, No. 1.

[12] Mrongowius: Russky Vratsch. 1912, No. 26; ref. Derm. Wchnschr., 1912, No. 51a, p. 1563.

[13] Jullien L.: Bull. méd., 1912, p. 715; Derm. Wchnschr., 1912, No. 51a, p. 1564.

[14] Belin, Milian and Amodrut: Reinfectio Syphilitica nach Salvarsan, Bull. méd., 1912, p. 195; ref. Derm. Wchnschr., 1912, p. 1167.

[15] Fournier F.: Rev. prat. d. org. gén.-urin., September, 1912.

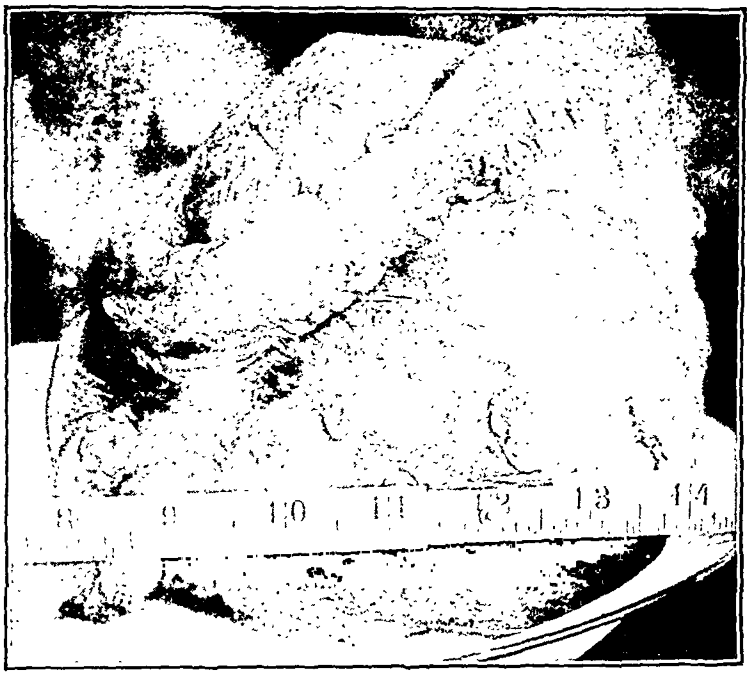
[16] Wüstenberg: München. med. Wchnschr, 1912, No. 30.

[17] Levis, Harold. J.: Salvarsan in Pregnancy, The Journal A. M. A., Aug. 24, 1912.

[18] Pollitzer: Salvarsan, New York Med. Jour., Feb. 4, 1911.

Operation.—Jan. 15, 1913.—Excision of cyst and of adherent loop of bowel. An incision to the right of the median line beginning three inches above the umbilicus and extending down to the pubis exposed a cystic swelling along the surface of which throughout its entire circumference ran a coil of the small intestine. It became apparent that we were dealing with a cyst which had grown beneath the leaves of the mesentery and which could be extirpated only by removing the loop of the intestine which encircled it. After having resected the bowel and united the two ends by a lateral anastomosis, it became apparent that the circulation of five inches of the distal segment was so seriously affected that it had to be resected. An end-to-end anastomosis was effected between the two segments with a Murphy button. The portion resected came to within one inch of the ileocecal valve. The wound was closed without drainage with tier sutures. An intravenous injection of 28 ounces of saline solution was given at the conclusion of the operation.

Pathologic Report.—The specimen consists of an irregular spherical tumor measuring about 25 cm. in diameter and weighing 3,530 gm. The external surface is somewhat irregular owing to a protuberance above the general contour and a few nodular elevations. About one-third of the surface presents the general appearance of peritoneum. The remainder is rough and shows the presence of numerous fibrous adhesions. Attached to the surface of the tumor and surrounding about three-fourths of it like a belt is a segment of small intestine measuring 50 cm. in length. This is apparently normal in structure and is attached to the tumor by a strip of mesentery from 4 to 5 cm. in breadth. The tumor itself appears to have been developed between the layers of the mesentery. When opened, the tumor is found to be cystic in character and to contain a large quantity of hemorrhagic fluid and clots. The wall is extremely irregular varying in thickness from half a centimeter to several centimeters. The inner surface is extremely uneven and ragged and is covered almost everywhere by masses of blood-clot.



Sanguineous cyst of the mesentery of the small intestine. (Note section of ileum encircling the cyst and resected with it.)

Microscopic sections through the wall of the cyst show practically nothing but fibrous tissue containing a few areas of round cell infiltration and much brownish pigment, the latter lying chiefly within cells. Throughout large areas the fibrous tissue has undergone extensive hyaline degeneration; in some of the sections degenerated blood-clot is present. Comparatively few blood vessels are present, and these are small and thin-walled. There are no lining cells or other characteristics to indicate the nature or origin of the cyst.

Results.—The patient was discharged from the hospital Feb. 3, 1913, nineteen days after the operation, having fully recovered from its immediate effects.

PHYSICAL SIGNS AND SYMPTOMS

These mesenteric cysts are usually oval in shape, their greater diameter being vertical, though they are sometimes spherical, as in the case just referred to, and they vary from the size of a split pea to that of a man's head, filling the entire abdominal cavity. The cyst wall is composed of a fibrous tissue which varies in thickness from a thin membrane to 1 cm., being extremely tenuous in the multilocular variety, and much thicker in the unilocular. They are generally found not far from the ileocecal valve, occupying the middle of the abdomen, that is the mesogastrium, and occasionally in the mesentery of the jejunum, cecum and mesocecum. Most of these cysts are freely movable, especially in the transverse direction, and covered with loops of the small intestine. Their growth is usually rapid, though not uniform, and occasionally in the case of hydatid cysts a retrogression may take place. The rate of growth is often greatly accelerated by an accident and hemorrhage into the cyst. Percussion reveals a dull sound and an area of resonance around the mass, and palpation will usually detect a cystic tumor.

In addition to these physical signs, the symptoms of sanguineous cysts are variable, depending largely on their volume and origin. Occasionally, they are quiescent, and the lesion is revealed only at necropsy. Usually, however, they manifest themselves in the form of digestive disturbances, accompanied by pain more or less severe, simulating that which accompanies acute and chronic intestinal obstruction. At first, they are usually latent in character, but as the cyst increases in size, it presses on the neighboring viscera and causes severe abdominal pain, flatulence, obstinate constipation, volvulus, and finally actual obstruction. Coincidently there is loss of weight and emaciation, and if intervention is delayed too long, the patient will die of inanition.

METHODS OF TREATMENT

In mesenteric cysts, whether chronic or acute, operation is clearly indicated, since without it sooner or later death will occur almost inevitably from the extreme emaciation caused by interference with the lacteals, or from an acute peritonitis following rupture of the cyst and evacuation of the contents into the peritoneal cavity. In fact, it is the only means of preventing acute volvulus or intestinal obstruction. Theoretically, there are four possible modes of procedure: (1) Aspiration; (2) enucleation; (3) resection of the involved intestinal segment followed by excision, and (4) incision and drainage. The radical removal of the cyst, however, should be the method of choice whenever feasible. One may have to be governed by the individual case under consideration—by the location, the size of the lesion and the condition of the patient. When the patient is suffering from the chronic type without evidence of marked intestinal obstruction, the radical operation or extirpation should be resorted to, but when the disease assumes an acute phase, the simpler procedure of incision and drainage will be more likely to be accompanied by success, as it is more quickly done (Moynihan). Aspiration, pure and simple, has become obsolete, as it is fraught with danger and ineffectual, being followed by recurrence in over 50 per cent. of the cases.[1] Arékion[2] found in twenty-five cases treated in this manner only seven recoveries. I have found, as have the majority of surgeons, that excision of the cyst is the ideal method of procedure, whenever practicable. It is not a particularly difficult procedure, even when, as in cases of multilocular cysts or as in my own case, resection of a portion of the intestine is necessary on account of interference with the blood-supply of the bowel. Occasionally, the cysts are so large or the adhesions so numerous that both enucleation and resection would be impossible, and one must resort to incision and drainage.

CLASSIFICATION

These cystic tumors of the mesentery may be classified either according to their origin or their contents. The etiology of mesenteric cysts is a much-disputed question. Moynihan,[3] Porter[4] and Braquehaye[5] believe that they have a multiple origin, while Dowd,[6] Proust[7] and Niosi[8] assert that the majority of these cysts are embryonic in origin. Dowd supports this theory by the following statement in regard to the anatomy and development of certain of the genito-urinary organs:

> It is altogether within the bounds of probability that such a separation should from time to time take place from the Wolffian body or the germinal epithelium at an early time in embryonic life; and, if such portions are separated, it is not strange that they should be carried into the mesentery, mesocolon or mesorectum in the course of their development, and there form cysts.

We find the following classification given by him: (1) Embryonic; (2) hydatid; (3) cystic malignant disease. According to his theory chylous and dermoid cysts probably originate as embryonic ovarian sequestrations, while hydatid cysts form a class by themselves, being caused by *Taenia echinococcus*. Sanguineous cysts, he believes, are preformed cysts into which hemorrhage has taken place. Proust[7] also classifies these lesions under three headings: Embryonic, including cysts of intestinal origin from "rests" of the Wolffian body and dermoid cysts; serous cysts, and the lymphatic including chylous cysts.

I prefer, however, to consider these lesions as having a more varied origin and classified according to their nature, as Moynihan has done: (1) Serous cysts, unilocular or multilocular, which contain a pale, clear, straw-colored fluid, and arise either from a lymphatic dilatation or from hemorrhages between the layers of the mesentery; (2) chylous cysts, probably the most numerous, either unilocular or multilocular, containing a milky white fluid, and due to a dilatation of some of the lacteals or chyliferous vessels, or possibly to an effusion of chyle into a preexisting cyst, though Dowd classifies them as embryonic in origin; (3) hydatid cysts, which compose a class by themselves and are due to the *Taenia echinococcus;* (4) dermoid cysts, undoubtedly embryonic in origin, most likely ovarian, since they are much commoner in women than in men (twenty out of thirty-one), and lastly the category to which my case belongs, namely (5), the sanguineous cyst.

The proportion of this variety of cystic tumors is exceedingly variable. Arékion,[9] in 1891, found one sanguineous cyst in eighty-one cysts of the mesentery; in 1891, Bianchi[10] reported nine in 95 cases; and in 1892 Braquehaye[5] found twenty-five out of 104 cases of cysts of the mesentery. In 1900, Roques[11] collected reports of nineteen cases, and to these Timbal[12] added thirty. The latter author found that these lesions were a little more common in men than in women, and that they were more likely to develop during the earlier years. Both of these facts probably have some connection with the traumatic origin of most of these cysts. This variety does not really comprise a distinct class by itself, but rather is a variation of other forms, whose nature and development have been modified through accident. They are usually preformed cysts into which hemorrhage has taken place. In fact, all authors are agreed that traumatism plays a very important rôle in the formation and development of sanguineous cysts. It sometimes changes former serous cysts into sanguineous ones, and sometimes causes a rupture of one of the mesenteric vessels, resulting in a hemorrhage which afterward develops into a cyst in the folds of the mesentery. In the latter instance we have really not a true sanguineous cyst, but rather a traumatic hematoma. The forty-nine cases collected by Timbal[12] may be grouped as follows.

Mesentery	Pure sanguineous cysts	26
	Hematomata	9
Great omentum		2
Lesser omentum		1
Posterior cavity of the omentum		3
Transverse mesocolon		6
Descending mesocolon		1
Large ligaments		1

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TUBERCULOSIS ACQUIRED THROUGH RITUAL CIRCUMCISION

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Tuberculosis by direct wound inoculation while not a frequent method of contracting the disease has yet occurred often enough to demonstrate the fact that this is a real danger. In 1887 Willy Meyer collected reports of a number of such instances and added a report of a case of his own of tuberculosis acquired through ritual circumcision. Since that time many additional observations on this subject have been published but only two, so far as I am aware—one by Ware and one by Sara Welt-Kakels—in this country. From inquiries, however, I am led to the opinion that many cases occur which do not find their way into print.

REPORT OF CASE

The report herewith presented is of more than ordinary interest by reason of the virulence of the infection as shown by the wide-spread lesions and the fact that the death occurred at an earlier age than in any case of which I have found a record.

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[1] Deaver: Ann. Surg., May, 1909.
[2] Arékion: Étude sur les kystes du mésentère, Thèse de Paris, 1890-91.
[3] Moynihan. Ann. Surg., xxvi, 2, p. 1.
[4] Porter: Ann. Surg., xliii, 1, p. 380.
[5] Braquehaye: Arch. gén. de méd., November, 1892.
[6] Dowd: Ann. Surg., 1900, xxxii, 2, p. 515.
[7] Proust: Rev. de gynec., 1912, xix, No. 3.
[8] Niosi: Virchow's Arch. f. path. Anat., cxc, No. 2, p. 217.
[9] Arékion: Étude sur les kystes du mésentère, Thèse de Paris, 1890-91.
[10] Bianchi: Riforma med., November, 1891.
[11] Roques: Kystes sanguins du mésentère, Thèse de Lyon, 1900, No. 105.
[12] Timbal: Rev. de chir., 1910, xli, 50.

History.—On February 24 of this year there was admitted to the Babies' Hospital an infant 3 months of age with an extensive ulceration of the penis. The child was one of seven, four of whom were dead from various acute diseases. The parents were healthy as were the other living children. There was no evidence of syphilis or tuberculosis in the family. The infant at birth was a large child, reported to have weighed 11 pounds, and had been breast-fed up to the date of admission. When eight days old the operation of ritual circumcision had been performed, the blood being sucked in the usual manner. The wound did not heal properly and at the end of a week suppuration was present and ulceration followed which began in the prepuce and gradually extended, up to the time the child was brought to the hospital. About two weeks after operation swellings of lymph-nodes in the groin were observed and these also had steadily increased in size although showing no tendency to suppuration. The digestion had been good and the nutrition well preserved until the last three weeks, during which there had been apparently a steady loss in weight, refusal of food, and slight fever and cough. There was also a discharge from one ear and from the nose. Four or five days previously a scanty maculovesicular eruption had been observed over the trunk and extremities.

Examination.—A well-nourished, normally developed infant was found, weighing 11½ pounds, who did not appear acutely ill. Scattered over the body there were fifteen or twenty lesions which closely resembled those of varicella. Two or three were found on the scalp and several over the neck, shoulders, trunk and thighs. None were seen on the hands or feet and none on the mucous membranes. They were all very similar in character, from 3 to 4 mm. in diameter, vesicular at the periphery and crusted at the center, giving a somewhat umbilicated appearance. A very narrow zone of redness surrounded the lesions. Apparently there was no itching as they had not been injured by scratching. Elsewhere the skin, including that of palms and soles, was quite normal. Many râles were present over both lungs, but there were no signs of consolidation present. The heart was normal. The abdomen was moderately distended. The spleen was much enlarged, reaching fully two inches below the costal margin. The liver also was markedly enlarged, its lower border being three inches below the costal margin. In the inguinal region, both sides, was a chain of large nodular swellings about the size of the last phalanx of the little finger. No signs of suppuration were present. The penis showed complete destruction of the skin by ulceration quite to the abdominal wall and to the base of the scrotum (see Fig. 1). It was one granulating surface from which pus was freely discharging. At the meatus was quite a deep ulceration producing an appearance resembling a slight hypospadias. The tuberculin skin test gave a strongly positive reaction. Tubercle bacilli were found in the discharge from the penis, in the sputum and in scrapings from the cutaneous lesions described. The bacilli from the ulcers of the penis were carefully differentiated from smegma bacilli.

Tuberculous ulceration following circumcision.

Course of Disease.—The child lived sixteen days after admission. During this period there was a constant temperature usually varying between 99 and 101 F. but occasionally going to 102 or 103. There was progressive weakness, steadily increasing cough and râles throughout the chest. The glandular swellings in the groin became larger but did not soften. The other external lymph-nodes were not enlarged. The blood examination at date of admission showed a leukocytosis of 16,000; polymorphonuclears 85 per cent.; lymphocytes 14 per cent.; hemoglobin 65 per cent. Just before death the leukocytes increased to 24,000 and the polymorphonuclears to 92 per cent. No cerebral symptoms were present, but there was considerable restlessness and lumbar puncture was made two days before death. A clear fluid under normal pressure was obtained which gave a faint globulin reaction and showed an excess of cells—twenty to the cubic millimeter. The skin lesions present on admission dried up slightly during the period of observation but no new ones appeared. Death occurred from exhaustion.

Necropsy.—Body well nourished, the lesions on the skin still showing.

Brain: Three or four miliary tubercles were seen over the base and a few over the convexity, but the ventricles were not distended and no evidences of meningitis were present.

Lungs: The pleura was not adherent; both lungs were everywhere studded with miliary tubercles and small tuberculous nodules. Considerable bronchitis but very little pneumonia was present. The lungs looked much as if they had been infected by a syringeful of tubercle bacilli injected into the trachea. No part of the lungs had escaped. The bronchial and mediastinal lymph-nodes were caseous but not very large, none being over 1¼ cm. in diameter, and none showed softening.

Heart: A small yellow tubercle was seen on the coronary artery about its center. A tuberculous nodule, 2 mm. in diameter, was found in the wall of the right ventricle, and another smaller one in the wall of the right auricle near the entrance of the superior vena cava. This involved the pericardium, endocardium and cardiac muscle and was cheesy.

Abdomen: The parietal peritoneum was studded with miliary tubercles and tuberculous nodules, especially over the diaphragm. The spleen measured 8 by 4.5 cm., and on the surface and in its substance showed many tuberculous nodules of large and small size. The liver was large, fatty and showed many tubercles on its surface and a few in its substance. The kidneys each contained small caseous tuberculous nodules in moderate numbers, chiefly in the cortex. Both adrenals contained tuberculous nodules, one of which was caseous. Two similar ones were found in the pancreas. The stomach and duodenum were normal, but throughout the rest of the small intestine were great numbers of tuberculous ulcers some of which extended quite to the peritoneal coat. There were large tuberculous ulcers in the cecum and throughout the colon, even in the rectum.

The mesenteric lymph-nodes were greatly enlarged and caseous. The largest inguinal lymph-nodes were 3 cm. in length and 1.5 cm. in breadth. They were caseous but not softened. Extending upward from these was a chain of large caseous retroperitoneal lymph-nodes which followed the iliac arteries and then the aorta. One of the iliac arteries contained a cheesy lymph-node in its adventitia. The tuberculous character of this lesion was confirmed by microscopic examination. Three tubercles were seen on the mucous membrane of the bladder near its base. Both middle ears contained pus.

An opportunity was given to examine the man who had performed the operation. He was a pale, thin, almost emaciated individual, who looked decidedly tuberculous although no physical signs of disease in his lungs could be detected. In his sputum two acid-fast bacilli were found which looked like tubercle bacilli.

This case seems complete and the evidence of infection through the circumcision wound, conclusive. A healthy child, born of healthy parents, breast-fed, developed local symptoms of infection within a few days after the operation and these persisted, being followed after a few weeks by symptoms of general infection which continued until death. The lesions found at necropsy point strongly to a spreading of the infection through the lymphatic system beginning from the wound, and afterward to a general blood infection. At death, which occurred when the child was 3½ months old, practically every organ in the body was involved. Specially worthy of note in the lesions are the tuberculous nodules of the iliac artery and of the myocardium; the latter lesion I have seen but once before; also the tuberculides of the skin, a lesion which I believe is often overlooked; it has been observed at the hospital in two other cases during the present season, both patients being young infants.

A search through medical literature brings to light a considerable number of examples of tuberculosis spread by means of ritual circumcision. In all I have collected, with the assistance of Doctors Alan Brown and Stafford McLean, references or reports more or less detailed of forty other cases. These are of sufficient interest to make a brief summary desirable.

SUMMARY OF LITERATURE

LINDMANN'S[1] CASES: Two cases. The operation was done in the usual manner, the operator sucking the wound; one child died and the other recovered after a long illness. In both cases tuberculous ulceration occurred followed by caseous degeneration of the inguinal lymph-nodes. Ages of children are not given; the operator died two months after performing the operation, presumably of tuberculosis.

LEHMANN'S[2] CASES: Ten children with almost identical symptoms infected by the same operator. The operator subsequently died of tuberculosis. The wound was sucked in the usual manner. The early signs were similar—irregular, grayish preputial ulcers which gradually extended. After two or three weeks there was swelling of the inguinal lymph-nodes which in most cases suppurated. No microscopic examinations were made, the diagnosis resting on the clinical symptoms.

ELSENBERG'S[3] CASES: One case in full. The first diagnosis made was syphilis. Subsequently the patient developed suppuration of the inguinal lymph-nodes and afterward erysipelas. Tubercle bacilli were found in the sputum of the operator. The author reports that he has seen three similar cases but gives no details.

EVE'S[4] CASES: Infant 5 months old, admitted with suppurative inguinal adenitis (double) and preputial ulcers. Ritual circumcision had been done on eighth day. A few weeks afterward inguinal glandular swellings were noticed, which steadily increased. Abscesses were opened and curetted. Sinuses followed which were still present at 8 months. At 10 months the child was well. Pus from inguinal lymph-nodes injected into guinea-pigs produced tuberculosis. Operator died from tuberculosis seven and a half months after the circumcision. He did not suck the wound in this case but merely ejected some wine from his mouth over it. Author refers to another similar case but gives no details.

DEBROVITZ'[5] CASES: Infant 7 months old had multiple ulcers of the prepuce with extensive ulceration at the meatus. Inguinal lymph-nodes were much swollen. Subsequently they broke down and were incised. At 12 months of age wounds healed; patient was regarded as well. Operator was examined and found to be tuberculous; he rinsed his mouth with red wine before sucking the wound. The writer refers to three other cases, all from the same operator, but gives no details.

GESCHEIT'S[6] CASES: Five cases with similar clinical symptoms. Details of one case given. Patient's age 8 months. Circumcision on the eighth day. Wound healed in ten days except a dorsal preputial ulcer. There was edema of the parts. Inguinal lymph-nodes swelled to the size of pigeon's egg. Syphilis was suspected. Antisyphilitic treatment was used without success. All five cases occurred in healthy families. Three children died within six months of meningitis and enteritis; two at 7 and 8 months were living at the time of the report. All showed evidences of a primary local lesion. The operator was "thoroughly tuberculous" and had been long ill. Although he had done many previous operations these were the first infants known to have been infected. The author does not state how the diagnosis was made in his cases.

WILLY MEYER'S[7] CASE: Infant 12 months old. Family healthy. Only child. Circumcised on eighth day by an old man. At 4 weeks inguinal swellings were noticed and syphilis was suspected. Mercurial treatment was begun. At 4 months ulcer was noticed on the frenum. Moderate inguinal adenitis was present. Syphilis was still regarded as the diagnosis and treatment continued. There was no improvement under syphilitic treatment. Inguinal lymph-nodes subsequently broke down and were curetted. Tubercle bacilli in great numbers were found in the pus. Subsequent history not given.

HOFMOKL'S[8] CASE: Infant, 8 months old. Family healthy. The early symptoms identical with those in the other cases reported. Syphilis suspected and for a long time antisyphilitic treatment continued without success. Inguinal lymph-nodes subsequently extirpated; found caseous. Diagnosis established by microscopic examination.

KOLIZEW'S[9] CASES: Seven cases of tuberculosis of the penis are reported following circumcision by a rabbi suffering from tuberculosis. Two patients died; two made partial recovery; two were lost sight of, and one recovered. In only one of the families was there tuberculosis. Arluck and Winocouroff state that this report led to a movement of far-reaching social effect for the reformation of the performance of ritual circumcision.

WARE'S[10] CASE: Infant, 3 months old. Parents healthy. Ritual circumcision done at one week. Two weeks later inflammation of the prepuce. Swelling of inguinal lymph-nodes, both sides, first seen at 4 weeks. Preputial ulceration with moderate secretion also present. Syphilis suspected. Antisyphilitic treatment instituted but without benefit. Lymph-nodes broke down and were curetted. Tubercle bacilli not found, but the microscopic examination of the lymph-nodes showed giant cells and tuberculosis was diagnosticated. Case passed from observation.

WELT-KAKELS'[11] CASE: Infant, 6 months old. Healthy parents. Circumcision the ninth day by man presumably tuberculous. Wound sucked. Inguinal adenitis observed at the end of four weeks followed by suppuration. Tubercle bacilli found in the pus. Von Pirquet test positive. Lymph-nodes removed.

At 4 years of age the child was reported by the writer to be living, but, from physical appearance, was regarded as still suffering from tuberculosis.

J. M. T. FINNEY'S[12] CASE: Infant came under observation "some months after the circumcision" with local ulceration and enlargement of inguinal lymph-nodes. Tubercle bacilli in large numbers were obtained from the scrapings. Ulcerated areas were curetted. Inguinal lymph-nodes were excised, both sides. Bacilli were found also in the lymph-nodes. Subsequently tuberculosis of one knee developed. The patient was under observation many years and is reported never to have had any other evidences of tuberculosis. Investigation by the family revealed the fact that "several other children,"

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[1] Lindmann: Deutsch. med. Wchnschr., 1883, No. 30, p. 442.

[2] Lehmann: Deutsch. med. Wchnschr., 1886, Nos. 9 and 13, pp. 144 and 218.

[3] Elsenberg: Berl. klin. Wchnschr., 1886, No. 35, p. 58

[4] Eve: Lancet, London, Jan. 28, 1888.

[5] Debrovitz: Pest. med.-chir. Presse, 1899, No. 2 p. 5

[6] Gescheit: Internat. klin. Rundschau, 1889, No. 23, p. 964.

[7] Meyer: New York med. Presse, June, 1887.

[8] Hofmokl: Wien. med. Presse, 1886, Nos. 22 and 23, pp. 714 and 750.

[9] Kolizew: Ztschr. d. russ. Gesellsch. d. Volksgsndhtsfürsorge, in Monatsh. f. prakt. Dermat., 1893, xvi, 491.

[11] W. : New York Med. Jour., Feb. 26, 1898.

, : Arch. Pediat., 1909, p. 460.

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all of whom had been circumcised by the same man, had been similarly infected. He is stated to have been definitely tuberculous. The parents reported that he spat on a cloth which was used as a dressing for the wound after operation.

Arluck and Winocouroff's[13] Cases: Infant of 5½ months. Parents healthy. Circumcision on eighth day. Wound was sucked by one of the guests who was tuberculous. Inflammatory signs developed in the course of the next two weeks, followed by local ulceration, swelling and breaking down of inguinal lymph-nodes. The child wasted with signs of generalized tuberculosis. The entire penis ulcerated quite to the scrotum. There was great enlargement of inguinal lymph-nodes. Wassermann was negative; also the von Pirquet test, the latter thought to be due to the wide-spread infection. One tubercle bacillus was found in scrapings from the preputial ulcer. Death occurred four days later. Necropsy showed general tuberculosis involving lungs, intestines, spleen, mesenteric and inguinal lymph-nodes. The infection was believed to be through the lymphatic system.

Of the forty-one patients, including my own, sixteen are known to have died; seven are reported as having partially recovered or being scrofulous; in twelve the final results were not given; and only six are stated in the histories to have recovered. The youngest fatal case is that of the patient whose history I have reported. In several instances death has occurred as late as 11 months from tuberculous meningitis. The usual cause of death has been general tuberculosis. In many of the reports several children have been infected by a single operator. Thus, in Lehmann's cases, all ten of the children were thus infected; Gescheit reports four infants infected by the same operator; Lindmann, two patients; Debrovitz, four patients. In nearly all of the reports the fact is stated that the families were free from tuberculosis. As a rule the earliest symptoms of infection have been observed in about a week after the operation. The wound does not heal, but suppuration occurs and ulceration soon follows. The early ulcer may be anywhere on the prepuce but is often on the frenum. It may remain as a localized process or be general. At the end of a second or third week inguinal adenitis develops. In a very considerable number of cases it is reported that the lymph-nodes broke down and abscess formed, usually in two or three months after the initial infection. The cases in which early suppuration of the inguinal lymph-nodes took place and which were operated on, either by removal or curetting, were among those in which the results were the best. The symptoms of a wide-spread general infection rarely occurred earlier than the third or fourth month.

The diagnosis has been made in many of the cases by the clinical symptoms and history alone. Some of these were reported before systematic search for the tubercle bacillus in wounds was practiced or modern tuberculin tests were employed. In nearly all of the later cases reported, the diagnosis has been established by the discovery of the bacilli in the inguinal abscesses, sometimes from the preputial ulcers. In the latter situation they must be carefully differentiated from *smegma* bacilli. That the infection spreads through the lymphatic system seems certain and early removal of the inguinal lymph-nodes would therefore appear to be the most important measure to be employed in checking the extension of the infection. To be successful this must of course be done early.

In a very large proportion of the cases reported the first diagnosis made was syphilis, and the patients were treated for weeks and months by antisyphilitic measures without benefit and with loss of valuable time. It is my own belief that syphilis is less frequently acquired in this manner than is tuberculosis and that the latter disease should be first suspected. With the modern means of diagnosis in tuberculosis the early recognition of these cases ought not to be difficult. While the number of reported instances of tuberculosis acquired through circumcision is considerable there must be a very much larger number that have never found their way into literature. It is certain also that syphilis has been spread in this manner. These facts lead me to emphasize the statement made by the late Professor Maas, the German surgeon, that "it is the duty of the physician to raise his protest against the performance of ritualistic circumcision in every case."

14 West Fifty-Fifth Street.

[13] Arluck and Winocouroff: Beitr. f. Tuberk., 1912, xxii, 341.

PEMPHIGUS FOLIACEUS *

J. B. KESSLER, M.D.
IOWA CITY, IOWA

Pemphigus foliaceus was first described by Cazenave in 1844. It is a rare skin disease occurring about once in five thousand cases. Radcliff Crocker, with his almost unlimited experience up to the year 1903, encountered it only six times—in five women and one man. It is one of the rare forms of dermatitis that has a universal distribution, with the formation of flaccid bullae which quickly rupture and discharge their contents, leaving an inflamed, excoriated and fissured surface.

The disease may begin as a pemphigus foliaceus or from a chronic pemphigus vulgaris, the bullae changing their character. It may develop from a dermatitis herpetiformis, according to Hallopeau, or from a general dermatitis exfoliativa.

The bullae are flaccid and at times do not raise the epidermis perceptibly; if the amount of fluid is greater, it extends the lower part of the bullae. The contents are purulent, almost from the beginning. The mucous membranes may be involved. There is a feeling of stiffness and tension in the skin where the epidermis has dried. There is not much itching or burning as a rule, but at times it is severe and paroxysmal, owing to the exposure of the corium to the air.

After the disease has lasted for a time, there may be fever, either intermittent or continuous, or the temperature may remain normal.

The etiology of this disease is still in doubt; chills may be a causative factor, or violent emotions, according to Hallopeau.

In making a diagnosis we must differentiate from universal eczema, pityriasis rubra, lichen acuminatus universalis, eczema rubrum and pemphigus vegetans.

The disease may be years in duration, but, sooner or later, the patient succumbs.

Two cases which have come under my observation since March 5, 1912, may be of interest to the general practitioner, if not to the dermatologist.

Case 1.—Mrs. M., aged 56, a native of Denmark, who had come to America the previous October to visit a married daughter living in northern Iowa, was admitted to the University Hospital, March 5, 1912. Her father died at the age of 61; mother died aged 36 or 38; one brother and one sister are living and well; three brothers are dead, cause unknown.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Nothing is known of grandparents; there is no history of malignant or Bright's disease or nervous trouble, and no history of skin diseases in the family. Husband and two children are living and well; one child died at 4 months, and one at 2 years of age. There have been no miscarriages, no diseases of childhood or specific diseases. The patient had influenza in 1909.

About June 20, 1911, the patient noticed a red spot on the right cheek; this soon developed into a blister which spread slowly until January, 1912, when the whole face and upper trunk were involved: the disease kept creeping downward until March, when the entire body was covered with blisters, ruptured and unruptured. The blisters came out in crops, appearing on the face and then on the body; the lesions seemed to spring from the healthy skin. The patient says that unless she sees a lesion or it is ruptured, she is not aware of its presence. When the bulla ruptures a new red epithelium is seen, which the patient says stings as if needles were pricking.

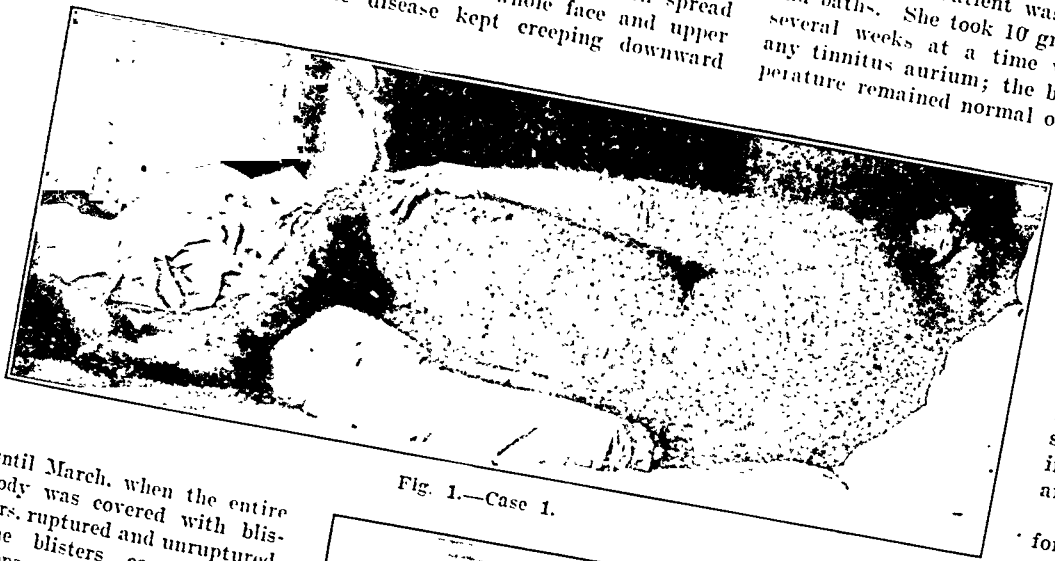

Fig. 1.—Case 1.

There seems to be a separation of the epidermis from the derma to a marked extent in this disease. The patient had two falls while in the hospital; contrary to instructions that she should not get out of bed when the nurse was out of the room, she would persist in doing so; she fell on a tray once and the epidermis was separated and rolled up for about three inches square on one palm. After the second fall a like condition was found on one ankle.

Since admission to the hospital, patient's temperature had ranged from 98 to 104 +. The last month in the hospital it was normal.

While the temperature ranged from 102 to 104 + about two or three weeks, the condition of the patient was serious; the contents of the bullae, especially those about the face, instead of being an opaque, purulent exudate, became greenish and very foul.

The general condition of the patient remained good, except when the temperature was high.

The lesions did not appear on the palms, soles, conjunctiva or mucous membranes. After the bullae ceased to form, there was abundant exfoliation of the epidermis (Fig. 1). There was no involvement of the lymph-nodes. Blood-pressure was 120, hemoglobin 65 per cent., reds 403,000, whites 15,200, polymorphonuclears 70 per cent., transitionals 2 per cent, eosinophils 9 per cent.

The urine was normal both chemically and microscopically.

Treatment.—Patient was treated with large doses of quinin and baths. She took 10 grains of quinin every four hours for several weeks at a time with the best effect with scarcely any tinnitus aurium; the bullae ceased forming and the temperature remained normal or nearly so.

The medicine at times was suspended and bullae would again form. When the patient left the hospital, Sept. 11, 1912, there had been no bullae on the skin for about two months; she apparently had recovered. In conjunction with the internal medication, the patient was given bran baths daily, which seemed beneficial in preventing cracking of the skin around the joints.

I have tried to keep informed in reference to this patient, and received a letter from Germany bearing date of April 17, 1913, stating that she had had a relapse, and was unable to get out of bed without assistance; but when assisted, fluid would ooze from the legs. I am sorry that she could not remain under observation longer, and the medicine continued, to see what the final result would be. From the description by letter, I shall say that probably an eczematous condition supervened.

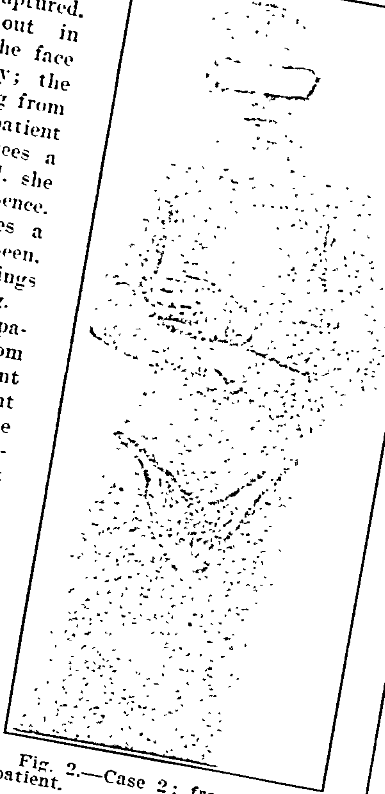

Fig. 2.—Case 2; front view of patient.

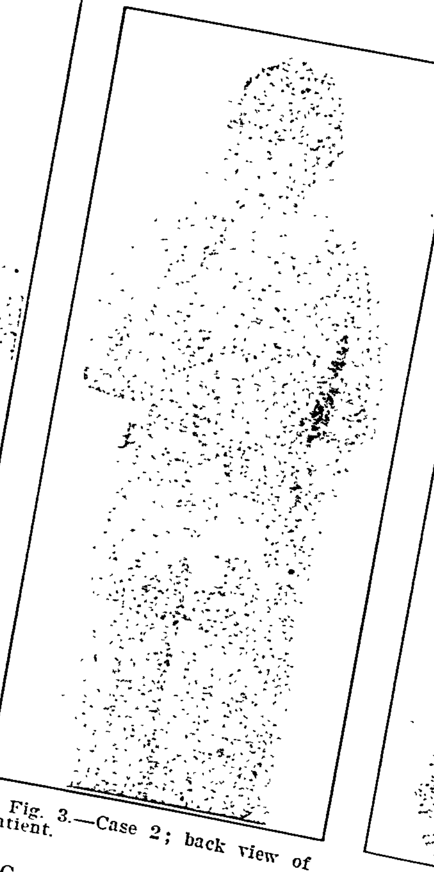

Fig. 3.—Case 2; back view of patient.

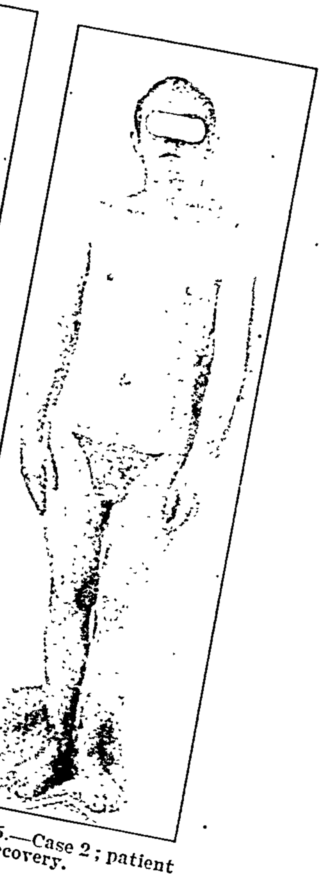

Fig. 5.—Case 2; patient after recovery.

Case 2.—The patient, Earl B., referred by Dr. Emmett Ady of West Liberty, Iowa, was a whi aged
Father is supposed to be alive, and mot 37,

unknown cause. One brother and four sisters are alive and well; the history is negative in reference to grandparents and malignant and tuberculous diseases. Patient denies venereal diseases and gives the usual history of the diseases of childhood. The present disease began the latter part of December, 1912, when the patient noticed a small red eruption on his right arm, which itched severely.

The first lesion was about the size of a split pea and grew larger and finally became the size of a dime. More of these appeared on the arms, then on the chest, scalp, neck, face, trunk and finally the legs, so that the entire body, except the eyes and mucous membranes, was affected (Figs. 2 and 3).

The lesions became blisters, filled with a yellowish fluid which would rupture and wet the patient's clothing. Finally the bullae became confluent, and the body appeared to be one solid mass of eruption. About the time the patient entered the hospital the bullae began to dry up. When he came to the city he called at my office while I was out. When I entered, the first thing that greeted me was an offensive odor, not sweetish, but very repugnant. The patient was accompanied by his brother and another relative; the latter had worn a dog-skin coat and had taken it off and placed it on a chair. My first thought was that it was the most offensive dog-skin coat that I had ever come in contact with.

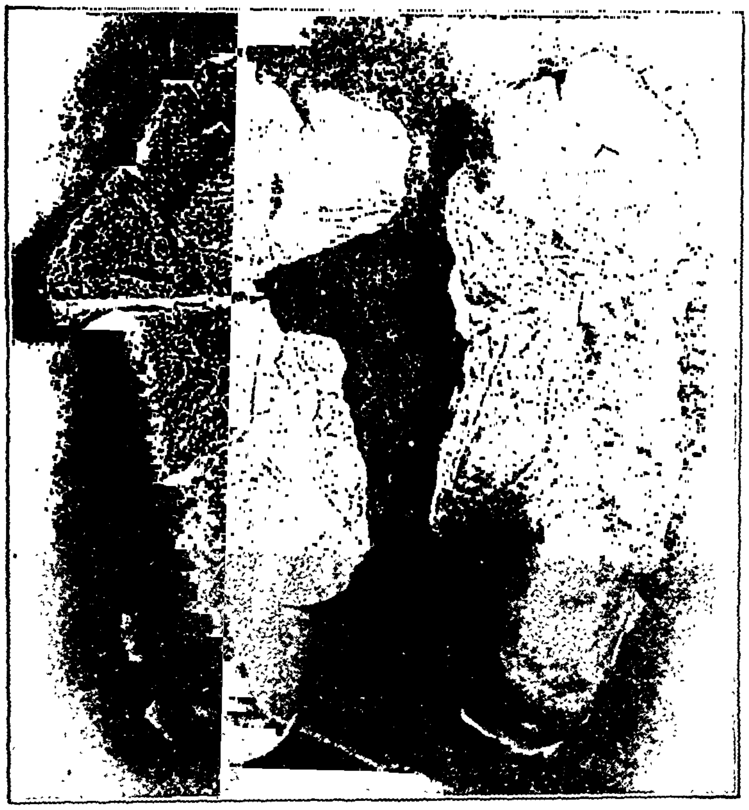

Fig. 4.—Case 2; the desquamated soles.

The boy was bent over. When asked why he bent forward so much he stated that his clothing stuck to him so that he could not stand erect. On removing his clothing, he was seen to be a mass of scales and bullae, from the crown of his head to his ankles; his feet and buttocks were not involved, but were invaded later; scales and crusts were large in places, especially on the right wrist, where they were about 3 by 4 inches. Desquamation of the finger-nails and toe-nails eventually occurred, then the soles of the feet in mass (Fig. 4), which could probably be accounted for by the patient being a farmer boy who ran barefooted all summer and into early winter.

The patient's temperature ranged when he entered the hospital, Feb. 4, 1913, from 102 to 103 +. Urine, blood, heart, lungs and kidneys were normal.

Treatment.—This patient was treated the same as the first patient, internally, and was given linseed meal baths with ½ ounce compound solution of cresol to the bath, and cold cream applied to the joints to keep the skin from cracking. This kept the skin moderately soft and comparatively free from odor.

This patient left the hospital twelve weeks after entrance apparently well (Fig. 5), five months after the commencement of the disease. I shall have this lad continue to take small doses of his medicine for an indefinite time.

SUMMARY

1. The internal and local treatment in these cases seemed to be highly efficacious.

2. Two patients within one year with pemphigus foliaceus in an agricultural district is unusual.

3. Quinin in large doses seems to be highly beneficial in keeping the disease in abeyance.

4. Linseed meal and baths containing compound solution of cresol remove the odor and keep the skin pliable and the patient comfortable.

106½ East Washington Street.

ABSTRACT OF DISCUSSION

Dr. Alfred Schalek, Omaha: I was very much interested in Dr. Kessler's paper, because I saw one of these rare cases about two years ago. My case had a peculiarity which I have never seen mentioned anywhere in having some of the features of epidermolysis bullosa; the least trauma would develop into a bulla. We have all come to consider pemphigus foliaceus a very hopeless condition with high mortality. I have treated various forms of skin disease with quinin internally, some of them with very good results. In one case of chronic urticaria it seemed to control the eruption, and I have also seen good results from it in lupus erythematosus. For these reasons I believe it may be worth a trial in pemphigus.

Dr. Richard L. Sutton, Kansas City, Mo.: The position occupied by pemphigus foliaceus among the bullous eruptions is a matter of more than academic interest. Recently, two of my students, Drs. Dannie and Smith, worked up a typical case of this disease quite thoroughly and with rather surprising results. The patient, a Pullman-car porter, was a man of 43 years in whom the disease had been present for over three years. Practically the entire surface of the body, with the exception of the mucous membranes, was involved. The *Bacillus pyocyaneus* was repeatedly obtained in pure culture from the contents of the bullae and from the serum which exuded from the skin at various points at which the epidermis was broken. At the time of admission the patient was so emaciated and weak that he had to be carried into the hospital. After nine weeks of bacterin therapy (autogenous vaccines being employed), the skin was entirely clear with the exception of an occasional distended bulla, and the patient's general condition was much improved. At this time, a 0.6 gm. dose of salvarsan was given, and the patient's skin promptly cleared up and he gained over 40 pounds in weight within less than one month. At present he is apparently well and attending to his regular duties. In this case I believe that the condition was simply a pemphigus chronicus, plus a pyocyaneous infection. It is probable that not all of the cases diagnosed as examples of pemphigus foliaceus are due to the same cause or causes, but the prompt and excellent results that followed vaccine and salvarsan therapy in this instance certainly were suggestive, to say the least.

Dr. William A. Pusey, Chicago: I have reported on a previous occasion a case of pemphigus foliaceus with a rather remarkable favorable result. This was a young man, a farmer, who came into my service in the Cook County Hospital showing all of the features of a well developed case of pemphigus foliaceus. The case was seen by several Chicago dermatologists and all agreed on the diagnosis. I gave an utterly unfavorable prognosis as to recovery and an opinion that the case would probably drag on for a long time. In the course of six or eight weeks, however, to our great amazement and without any treatment of consequence, the disease entirely disappeared, and so far as I know, has never recurred. I have seen, I should think, ten or a dozen cases of pemphigus foliaceus and I have been rather impressed with the belief that it—and pemphigus in general—has a tendency to occur most frequently in farmers and those in allied occupations. I have a feeling that we shall learn in time that the course of pemphigus foliaceus is somewhat influenced by the age of the patient, and that the disease in younger persons offers a better prognosis than it does in the elderly. I think that in estimating the value of any method of treatment we must not fail to take into consideration the possibilities of spontaneous cure or improvement in these cases.

Dr. Howard Fox, New York: There are just one or two points that I should like to comment on. Last summer, together with my father, Dr. George H. Fox, I saw an absolutely typical text-book case of pemphigus foliaceus, and the interesting point of this case was that the patient, a woman had previously suffered from lupus erythematosus, for which she had been treated with iodin locally and quinin internally. Several months later she developed pemphigus foliaceus, which ultimately proved fatal.

Dr. H. H. Hazen, Washington, D. C.: I have had the opportunity of seeing four cases of pemphigus foliaceus during the past two years, and I have come to the conclusion that we have not yet reached an absolute classification of this disease. For example, there are cases of dermatitis exfoliativa, the so-called Ritter's disease, which are objectively the same as pemphigus foliaceus. As regards the causation of pemphigus foliaceus, Lipschitz has reported the presence of a distinctive organism in the lesions, a finding that I have not confirmed. As to treatment in one of our cases we gave two injections of salvarsan without any effect. One patient was apparently benefited by continuous tubbing. In another case, treated by keeping the patient covered with a dry powder, as suggested by Drs. Martin F. Engman and Charles J. White, no beneficial effect was observed. The Roentgen ray treatment was also unsatisfactory. I should particularly like to make the point that the lesions are autoinoculable. Serum from a vesicle rubbed into or injected into the skin of the same patient will cause a new lesion, whereas salt solution will not do this.

Dr. A. Ravogli, Cincinnati: I have at present a patient under my observation, a woman who has been under treatment for the past three or four years for pemphigus foliaceus. She has had numerous outbreaks of bullae. The bullae contain little serum, and soon break. The skin was in such a condition that on merely touching her to give hypodermic injections in the parts not affected with bullae, some of the epidermis would detach and come out on the finger. In the treatment of this patient, in addition to quinin—which was not, however, given in the large and repeated doses suggested by Dr. Kessler—I have used the cacodylate of soda and an injection of staphylococcic vaccine. Nothing has done her much good. At present I am using an ointment of resorcin and salicylic acid (15 grains to the ounce) together with a little arsenic internally (Fowler's solution), and she is getting on fairly well.

Dr. J. B. Kessler, Iowa City: The treatment of pemphigus foliaceus outlined in my paper is not entirely new. Several years ago a writer, whose name I do not recall, recommended the use of large doses of quinin in pemphigus vulgaris. That gave me my cue, and I tried the drug in these two cases of pemphigus foliaceus with the happiest results. In order to secure these results, the quinin must be given in large, repeated doses. In one of my cases, that of the boy, I gave 4 grains every four hours, and later increased the dose to 7½ grains every four hours. These patients apparently tolerate the drug in large doses.

The Tendency to Revert to the Normal.—Speaking generally, there is undoubtedly a tendency in the individual who has some morbid variation from the normal to reproduce that variation in his offspring, although Nature is forever trying to revert to the normal, and in favorable environment she succeeds in the generality of cases in restoring the normal condition. Hence you see, even in families in which a morbid tendency is strongest, most of the members usually escape.—F. M. Sandwith in *Clin. Jour.*

THE ACTION OF SO-CALLED EMMENAGOGUE OILS ON THE ISOLATED UTERUS

WITH A REPORT OF A CASE OF PENNYROYAL POISONING *

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History.—In August, 1912, I was called as a coroner to the Maryland General Hospital to inquire into the death of a young white girl, aged 16, who was brought to the obstetric ward of the institution in a comatose condition and died there two hours after admission. On investigation and after a necropsy I found that the deceased died as a result of a criminal abortion and under rather peculiar circumstances. Four days previously, the girl, who was some three or four months pregnant, sought relief from her condition by swallowing about thirty-six pennyroyal pills of a well-known brand, recommended as an efficient and harmless emmenagogue. Twenty-four hours later she had an incomplete abortion and at the same time began to develop signs of serious poisoning. The symptoms were partly of gastro-intestinal origin but were chiefly referable to the nervous system. Beginning with a severe headache and pains in the back, they were followed by delirium and convulsions, and finally coma on the third day, and death on the following day.

Necropsy.—At my direction, Dr. N. G. Keirle made a postmortem examination, which pointed to the fact that the abortion was incomplete and had evidently been completed by mechanical means. There were, however, no marked signs of a severe infection, either local or general, and the chief anatomic lesions were of a nature not referable to a septicemia or pyemia. There were noted a patchy congestion of the ileum, an edematous condition of the brain, and most striking of all, an extremely marked fatty degeneration of the liver and kidneys. The spleen was not enlarged or swollen. The lungs showed no special abnormalities, but the heart showed some fatty change.

These findings led to the conclusion that the cause of death was, primarily, poisoning by pennroyal and, secondarily, a terminal infection; and such was in substance the verdict of the coroner's jury.

Pennyroyal as a household remedy has been known from ancient times, and as far back as Diascorides[1] we find a description of its many virtues. At present, however, its popularity is confined chiefly to England, America, and parts of Russia, in which countries it enjoys the reputation of being an efficient emmenagogue and abortifacient. As to its efficacy in that respect opinions of writers on the subject differ, some, like Taylor,[2] declaring that it has no action at all, others, as for instance Kobert,[3] holding the opposite view. There is, however, a pretty general consensus of opinion that the drug, oil of pennyroyal, may cause toxic and sometimes even fatal symptoms, and there are three or four cases of poisoning reported in literature which sustain this view.

Thus, Wingate[4] reports a case of a pregnant woman who took a large dose of pennyroyal oil and suffered from severe nervous symptoms, but did not abort. J. G. Marshall[5] describes a case of abortion induced by pennyroyal, with very alarming toxic symptoms and collapse. Flynn[6] describes a case in which a woman two months pregnant took three drams of oil of pennyroyal to produce abortion, without success, but with severe nervous depression and alarming circulatory signs. W. T. Allen[7] reports the following case more fully:

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* From the Pharmacologic Laboratory of the Johns Hopkins University.

[1] Diascorides: De Materia Medica, Ed. C. Sprengel, 1829, Lib. III, Cap. XXXIII.

[2] Taylor: Manual of Medical Jurisprudence.

[3] Kobert: Lehrbuch der Intoxikationen, 1893, p. 432.

[4] Wingate: Boston Med. Jour., 1889.

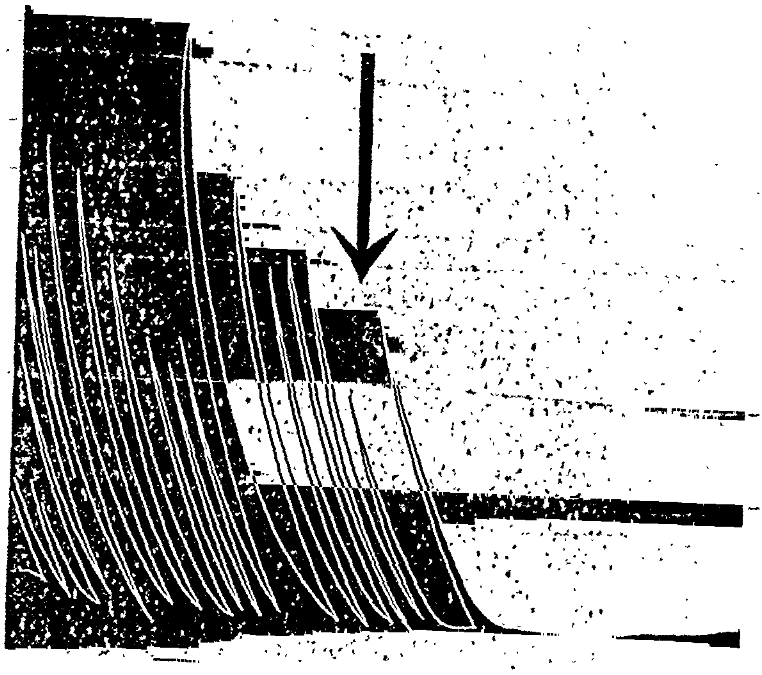
[5] Marshall: Brit. Med. Jour., 1890, i, 542.

[6] Flynn: Brit. Med. Jour., 1893, ii, 1270.

> *History.*—A woman of 23 years was admitted to the infirmary in Liverpool in a collapsed condition, suffering from symptoms of acute gastritis. It was learned that four days previously she swallowed a tablespoonful of pennyroyal in order to bring on menstruation. Excessive vomiting and collapse followed, from which she did not recover, and she died four days after admission.
>
> *Necropsy.*—A post-mortem examination was ordered by the coroner, and the following lesions were found: *Stomach congested, also small intestine, especially the ileum; congestion of large intestine down to rectum; also congestion of the brain.*

Two varieties of pennyroyal are known, oleum hedeomae (U. S. P.) and oleum pulegii, the English variety —which act in practically the same way.[8]

The action of oleum pulegii was experimentally studied by Falk[9] in 1890. Working on rabbits he found that acute poisoning caused a fatal central paralysis; more chronic poisoning was followed by slowing of the pulse, and fatty degeneration of all the organs, especially the liver and the heart. A more extensive pharmacologic and pathologic study of the drug was undertaken by W. Lindeman,[10] who also noted an inhibition of respiration and heart action, and anatomically marked fatty degeneration of various organs, especially of the liver.



Effect of oleum hedeomae (pennyroyal) on the pregnant uterus. Arrow indicates point of injection of the oil of pennyroyal.

Basing his conclusions on the above-mentioned, together with some other experimental and clinical data, Kunkel[11] sums up the toxicology of pennyroyal as follows: In acute poisoning—paralysis, slow respiration, subnormal temperature, vomiting, and some slowing of the heart; in chronic poisoning—fatty degeneration of the liver, heart, kidneys, thyroid, pancreas and salivary glands. Comparing this description with the clinical and pathologic picture presented by my case, there seems no doubt but that we had to deal with a case of pennyroyal poisoning. The chief difference between the case of Allen quoted above and my case is in respect to the gastro-intestinal changes. This can be well understood, however, by noting that in the one case the victim ingested the pure oil, while in the other the girl swallowed not oil but pills.

Although the pharmacologic and pathologic action of pennyroyal were pretty carefully studied by Falk, and Lindeman, as mentioned previously, neither they nor other observers directed their attention to the question how, if at all, oleum pulegii affects the uterine contractions. The same is true of the other so-called emmenagogue or abortifacient oils. None of them, as pointed out by Meyer and Gottlieb,[12] have been investigated as to their specific action on the uterus. Thus, for instance, the once very popular preparation apiol, still much advertised in French journals, was carefully studied by Hefter,[13] who, it is well to note, observed here, too, the most striking pathologic lesion, a fatty degeneration of the liver; but no mention is made of its action on the uterus, though that is the property of the drug which is most emphasized by the drug dealers.

I have undertaken, therefore, to study the effect of the various so-called emmenagogue oils on the *isolated* uterus, for the purpose of solving this problem.

METHOD

The horns of a cat's uterus, pregnant and non-pregnant, were used, and the apparatus was very much like the one used by Dale and Laidlaw in their work on standardization of pituitary extracts.[14] The uterine strip is suspended in a small glass chamber, one end being fixed to the bottom of the chamber, the other, or free end, being attached to the short arm of a lever and lightly weighted. The chamber is filled with Locke's solution kept at a very constant temperature, 38 C, through which a constant stream of oxygen is bubbling. The bottom of the chamber is drawn out into a tube to which a piece of rubber tubing is attached and clamped off at will, so as to draw off and change the solution whenever desired. The whole apparatus is immersed in a water-bath or jacket, for the regulation of the temperature. (There are a great many other details and precautions to be followed in the experiments into which we need not enter in this place.)

The manipulation and exposure of the uterus, followed by immersion in the warm bath almost invariably produce a high degree of tonus in the suspended preparation. When it is left to itself, however, the tonus slowly gives way, with small rhythmic interruptions, until a condition of almost complete relaxation is produced. This condition of uniformly low tonus is usually attained after suspension from fifteen to thirty minutes, when the uterus is ready for testing. In this condition the uterus is either quiescent, or, in ideal preparations for our purpose, it shows small rhythmic contractions. These contractions are recorded on the kymograph, and after a normal tracing is taken, the drug to be tested is introduced into the chamber and its effect observed.

RESULTS

I have tested out in the above manner the actions of the following oils: oleum hedeomae (pennyroyal), oleum sabinae (savine), oleum tanaceti (tansy), oleum rutae (rue), oleum thymi (thyme), oleum terebenthinae (turpentine) and apiol. The results obtained were as follows: All of these substances, even in small quantities, have absolutely no stimulating action on the uterus. On the contrary, they cause its relaxation and even paralysis. Thus the illustration shows the powerful normal contractions of a pregnant uterus, immediately inhibited, and paralyzed by the addition of a small amount (0.05 per cent. solution) of pennyroyal. The same effect is produced by tansy and apiol. These three drugs, pennyroyal, tansy, and apiol, seem to be the most toxic of the group examined. All of the drugs mentioned, however, acted in a similar way. The difference was only *in degree*. The least deleterious of the group, as might be expected, was turpentine. It required a much greater quantity relatively of that drug to paralyze the contractions. In no case, however, was there any stimulating or tonic effect.

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[7] Allen: Lancet, London, 1897, i, 1022.

[8] Peterson and Haines: Text-Book of Medicine and Toxicology, 1904, ii, 636.

[9] Falk: Therap. Monatsh., iv, 448.

[10] Lindeman: Arch. f. Exper. Path. u. Pharmacol., xlii, 356.

[11] Kunkel: Toxikologie, 1901, ii, 962.

[12] Meyer and Gottlieb: Experimentelle Pharmakologie, Ed. 2, p. 202.

[13] Hefter: Arch. f. Exper. Path. u. Pharmakol., xxxv, 365.

[14] Dale and Laidlaw: Jour. pharmcol. and exper. thérap., iv, 75.

CONCLUSIONS[15]

My observations lead me to the following conclusions:

1. The so-called emmenagogue oils are by no means innocuous substances.
2. They have absolutely no direct stimulating action on the uterine contractions or tonicity.
3. On the contrary, they inhibit such contractions, and even paralyze the uterus.
4. Their action as abortifacients, if they act as such, is no different from that of any other powerful systemic poison, such as phosphorus or arsenic.
5. They have very little if any therapeutic value, and do not deserve the place among the official pharmacologic preparations which many of them hold.

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RECENT IMPROVEMENTS IN THE QUININ TREATMENT OF LOBAR AND LOBULAR PNEUMONIA

THE AUXILIARY USE OF COCAIN, POSTERIOR-PITUITARY EXTRACT, AND BACTERIAL PRODUCTS

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That acute pneumonia, and especially acute lobar pneumonia, has for many years occupied first place in the dangerous infections of the temperate zone is so well known that it has become unnecessary to cite statistics. Twenty-five or thirty years ago it was usually stated that the mortality of acute lobar pneumonia was about 25 per cent. under all circumstances, and the tendency of systematic writers was to teach that treatment, apart from good nursing and the meeting of certain symptomatic indications, exerted but little influence. On the other hand, many medical men not occupying official positions, and especially those who practiced in country districts, expressed great faith in the influence of certain special methods of treatment, and looked on a mortality of over 10 per cent. as excessive.

Recent mortality statistics as collated by G. A. Gibson[1] are, however, even more unfavorable than those given by teachers and writers of a generation ago. Gibson's figures are taken from the mortality returns of Great Britain, and from the papers of Wells, Musser and Norris, Beddard, Rychner, and other American, British and Continental writers, and from many of the leading hospitals of the world. The death-rate over a period of forty years, as given by the various sources and authorities cited, ranges between 20 and 22 per cent., but, if the last decade alone be taken, it is between 30 and 40 per cent. Thus in the Massachusetts General Hospital, according to Wells, it was 18 per cent. in 1822 and 30 per cent. in 1903. In the Boston City Hospital it was 21 per cent. in 1865 and 39 per cent. in 1903; in the Cincinnati Hospital, 31 per cent. in 1866 and 43 per cent. in 1903; in the Wiener allgemeines Krankenhaus, 18 per cent. in 1840 and 27 per cent. in 1899; in the Glasgow Royal Infirmary, 16 per cent. in 1831 and 30 per cent. in 1900. From his own wards Gibson reported a mortality, during the last ten years, of 31.9 per cent.

The classes of cases treated in different hospitals differ so much, and age, sex, race, social status and personal habits of the patient count for so much, that comparison between various series of statistics would teach but little. Moreover, it is well known not only that there are seasonal variations, but also that in certain years the attacks are much more severe and the fatalities correspondingly greater than in other years. Still, the fact is evident that all over the world the percentage mortality of pneumonia is increasing, and reference to any volume of vital statistics will show likewise that the number of cases reported is steadily rising. Improved diagnosis may account for this in part; but it would tend to lower, rather than increase, the reported mortality percentage.

From the experience of any one observer, sweeping conclusions cannot be drawn. Nevertheless, it is worth while to continue to direct professional attention to the comparatively favorable result (that is, a much reduced mortality, ranging from 9 to 20 per cent.)[2] that attends a special method of treatment systematically carried out during the last decade at two hospitals[3] receiving quite different classes of patients, as well as in private and consultation practice; that is, carried out not only during the time of greatest general increase in mortality, but also under a great variety of conditions as regards persons, environments, seasons, years and other factors.

The underlying principle of this method of treatment is not new; and while its systematization, which has been gradually worked out since 1904, in my hospital services, partly at Jefferson Hospital and partly at the Philadelphia General Hospital, contains some original features, the object of this paper is not to claim priority, but to try to gain a wider use for certain life-saving measures.

During the last few years the roof wards at Jefferson and the galleries at Blockley have offered improved facilities for obtaining that constant supply of fresh air which is an integral part of the method, and the more favorable showing for this period may be attributed in part to that factor. The attempt was always made, however, to secure ample ventilation of the wards or special rooms in which the pneumonia patients were placed, so that the difference, after all, is not the great disparity between air and no air, but that moderate but still important difference between well-aired rooms and the open air. There is a difference also between a roof constantly covered with an awning and one open for the most part to the sky. The "blue sky" method is by far the best; it is preferable to let down the awnings only under stress of stormy weather.

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[15] A fuller account of my experiments will be published separately in the Journal of Pharmacology and Experimental Therapeutics.

[1] Gibson, G. A.: Acute Pneumonia, its Prognosis and Treatment, Glasgow Med. Jour., May, 1911.

[2] Cohen, S. Solis: Trans. Assn. Am. Phys., 1911, xxvi, 169; Am. Jour. Med. Sc., January, 1912, N. S., cxliii, 40; Internat. Med. Clinics, Series 22, iii, 56.

[3] At the Philadelphia General Hospital any mortality under 50 per cent. is quite favorable, owing to the large number of alcoholics and neglected cases, etc., there received.

Apart from fresh air, dependence has been placed on the following measures:

First, the *effective* use of *massive* doses of quinin. The most potent preparation, namely the very soluble double hydrochlorid of quinin and urea has been chosen, and one of the most active methods of administration, namely, intramuscular injection of a 50 per cent. solution is employed.

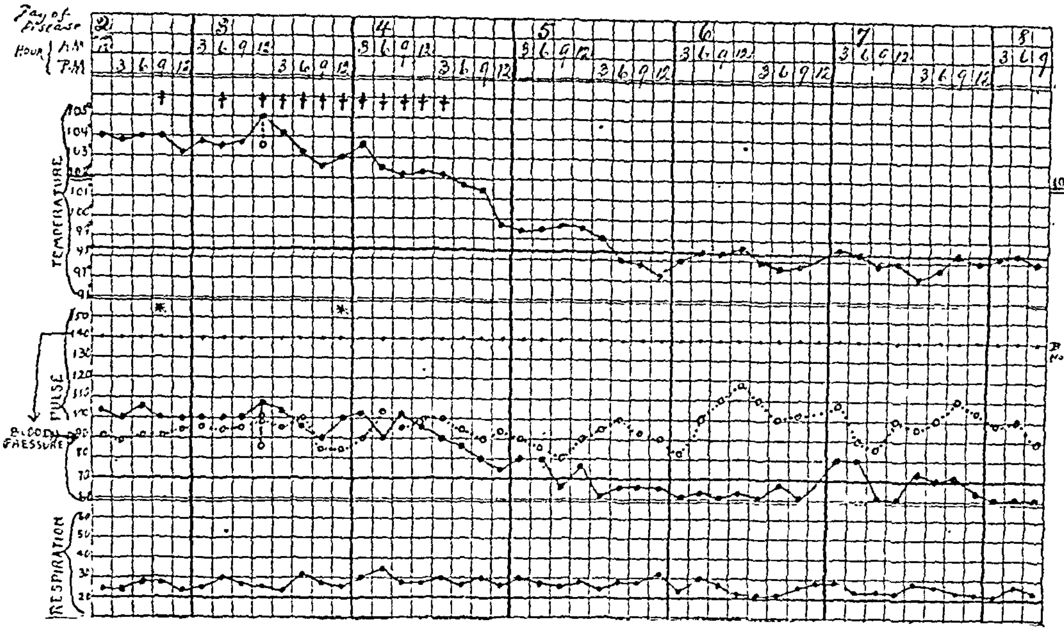

Chart 1.—Lobar pneumonia. Severe. Patient, man, laborer, aged 50. Admitted second day. Deep lesion, middle right lung. Quinin and urea salt 12 gm. (180 grains) in forty-two hours. Cocain salt, 2 injections 0.03 gm. (½ grain) each. Defervescence by lysis, complete fifth day. Sputum, rich culture pneumococci. Relatively low leukocyte count (14,000) increased following quinin injections (20,000). Polymorphonuclear percentage increased from 75 to 80. *Resolution began eighth day; complete fourteenth day.* Each plus sign (+) indicates an injection of quinin and urea hydrochlorid 1.0 gm. Each star (*) *indicates an injection of cocain 0.03 gm. The vertical chain of dashes and circle indicates* sponge and result. *The line composed of dots and circles indicates systolic blood-pressure* in millimeters Hg.

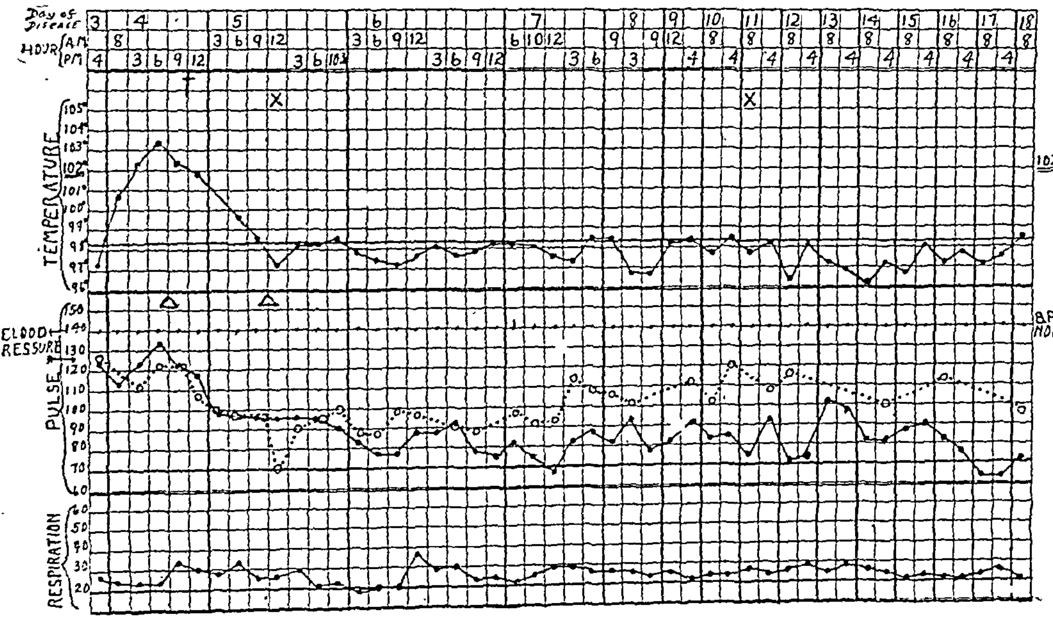

Chart 2.—Lobar pneumonia. Average severity. Patient, man, drug-clerk, aged 38. Admitted third day. Extensive consolidation, left base. Associated pleurisy. No effusion. Early defervescence, with delayed resolution. One injection quinin and urea salt. Two injections pituitary extract. Two injecti [illegible] *bacterin.* Leukocyte count 22,000; polymorphonuclear 70 per cent. [illegible] first bacterin injection to 34,000; polymorphonuclear 80 per cent. *Resolution began two days after second bacterin* injection, eleventh day of disease. Complete twenty-second day. Each plus sign (+) indicates an injection *of quinin* and urea hydrochlorid 1.2 gm. Each × indicates an injection of pneumococcus bacterin. Each triangle (△) indicates the use of pituitary (posterior lobe) extract. The *line composed of dots* and circles indicates systolic blood-pressure in millimeters Hg.

Second, the hypodermic injection of cocain hydrochlorid solution or of an extract of the posterior lobe of the pituitary body[4] for the maintenance of blood-pressure.

Third, in cases of prolonged fever, delayed resolution, or tardy convalescence, the injection of bacterins (pneumococcus or "mixed" vaccines, personal or stock) has been resorted to, in an endeavor to expedite recovery and apparently with good result. Further experience with this is needed before positive, general statements can be made. But in special instances *the good influence* has been striking.

The details of the treatment may thus be summarized:

On admission, so soon as the diagnosis is verified, the patient, if a fairly strong adult, receives under proper precautions,[5] an intramuscular injection of from 1 gm. (15 grains) to 1.6 gm. (25 grains) of the quinin and urea salt in 50 per cent. solution in hot sterile water. Children, the aged and the feeble receive smaller doses. The injection is repeated, but rarely with a greater dose than 1 gm. (15 grains), every third hour until the temperature falls, and remains, below 102.2 F. One-half grain (0.03 gm.) of cocain hydrochlorid or of caffein (sodiosalicylate) or 1 c.c. of pituitary liquid (representing 0.2 gm. of fresh posterior lobe) or 1 c.c. of a 1:1,000 solution of the posterior pituitary principle is injected hypodermically at the same time with the first dose of quinin, and repeated, likewise, every third hour, until the curve representing systolic blood-pressure in millimeters of mercury (taken in the arm), rises and *remains above* the curve representing pulse frequency in beats per minute.

This latter practice is founded on the observation of G. A. Gibson of Edinburgh concerning the prognostic significance of the relation between pulse-frequency and blood-pressure, thus charted. I have proposed to call this relation the Gibson pulse-pressure ratio, and trust that the suggestion will be adopted, as a worthy means of perpetuating the memory of that great clinician, whose recent demise is so marked a loss to medicine.

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[4] More recently I have been using a preparation said to be a solution of the active principle of this structure, which seems *to* be even more potent than the extract.

[5] *The skin is to be painted* with tincture of iodin; the injection made deeply; the syringe emptied, so that there will be no dripping over *the skin on withdrawal* of the needle, and the point of puncture sealed with collodion or iodoform-collodion.

The injections of quinin are governed in part by the temperature and in part by the general symptoms. The injections of cocain, caffein, or pituitary preparation are governed chiefly by the pulse-pressure ratio, but also by the general character of the pulse and of the cardiac action, the renal activity and the general symptoms. Sometimes these agents are alternated; sometimes camphor (2 to 10 grains in sterilized olive oil) is used as an adjuvant or temporary succedaneum. I have also used epinephrin, atropin, strychnin and even digitalis preparations and principles on occasion. But the routine is usually cocain and the pituitary preparation.

Creosote carbonate is sometimes administered by mouth during or after the course of quinin, if called for by special symptoms; less frequently (in cases in which extremely viscid sputum is expectorated with difficulty) ammonium salts (usually bromid, acetate or carbonate) or terebinthinates are given, or inhalations of appropriate vapors instituted. In other words, special symptoms are relieved when necessary. But this is not a necessary part of the routine.

No invariable maximum limit has been fixed to the number of injections of quinin, of cocain or of pituitary liquid, but it has not been considered wise to continue the three-hourly injections beyond the first twenty-four hours, and in but few cases has it been necessary to continue them so long as this. In those cases in which the desired effect, as indicated by temperature or by the Gibson blood-pressure pulse-rate relation, has not been reached within the first twenty-four hours, the interval between the injections has been increased to six hours. When the effect is gained, the repetition of the doses depends on the maintenance of it.

In general the effort is made to give as much quinin as is necessary and can safely be borne within the first forty-eight hours, and as little cocain or pituitary or camphor, etc., throughout the treatment, as is necessary to maintain the systolic blood-pressure at a safe distance from the pulse-rate. Proper attention is given to the excretions and to the quality as well as quantity of the urine. Saline infusion, alkaline-saline beverages to the point of keeping the urine alkaline, external applications of heat by flaxseed poultice, electric heating pad or cotton or lamb's wool jacket, and in rare instances oxygen inhalation are among the auxiliary methods employed routinely or in selected cases. But it is unnecessary to dilate on these, or on the details of diet and nursing, which are to be taken for granted.

The title of this communication is "Recent Improvements in the Quinin Treatment of Lobar and Lobular Pneumonia." To these alone is special attention called. Other matters are incidental and explanatory. The improvements to which reference is made are the use, in an almost routine way, of cocain and pituitary liquid, and the addition of the pneumobacterin injections after the most acute symptoms have been controlled. I have elsewhere discussed the philosophy of the treatment and may here be brief.

The change in the character of the defervescence from crisis to lysis, as exemplified by many charts which I have published and by those accompanying this article, together with the great symptomatic relief afforded by the quinin in the presence of an unchanged evolution of the pathologic process in the lungs, justifies the belief that the effect of the drug is antitoxic; and this conclusion is further strengthened by the entire absence of

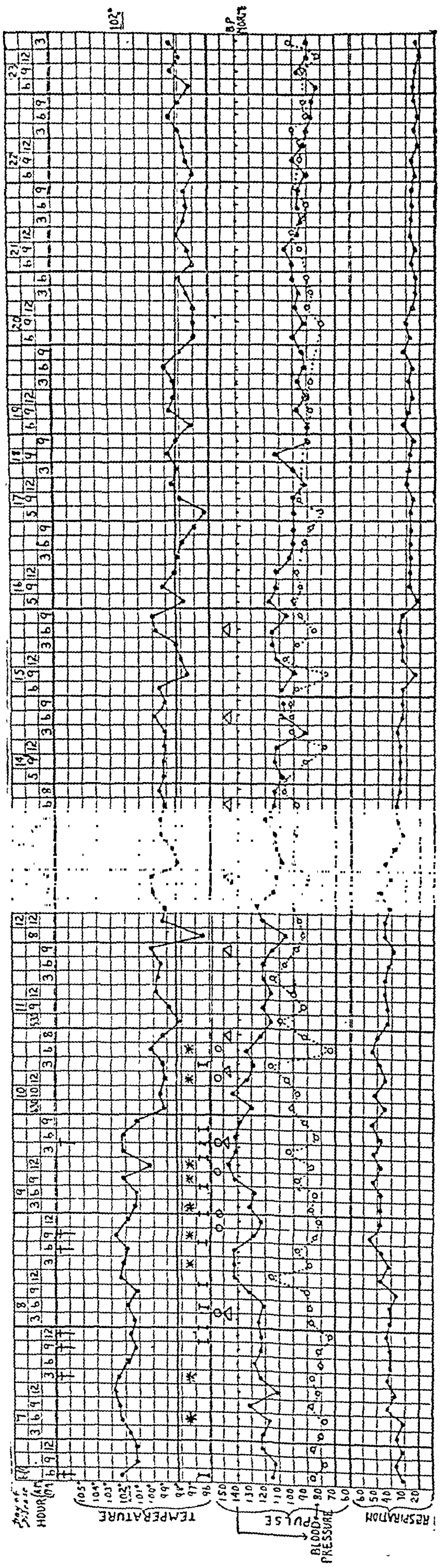

Chart 3.—Double lobar pneumonia. Severe. Extensive consolidation both bases. Patient, man, peddler, aged 30. Admitted almost moribund, sixth (?) day. Seven injections quinin and urea salt. Eleven injections camphorated oil. Nine injections pituitary extract. Nine injections cocain salt. Seven injections strychnin salt. Defervescence completed on nineteenth day. Resolution began seventeenth day; completed twenty-seventh day. Each plus sign (+) indicates an injection of quinin and urea hydrochlorid 1.2 gm. Each star (*) indicates an injection of cocain 0.03 gm. Each double dagger (‡) indicates the use of 30 minims camphorated oil. Each circle indicates the use of 0.002 gm. strychnin sulphate. Each triangle (Δ) indicates the use of pituitary extract (1 c.c.=0.2 gm. posterior lobe). The line composed of circles and dots indicates systolic blood-pressure in millimeters Hg.

cinchonism, notwithstanding the enormous quantity of quinin administered and absorbed. I have asked experimenters to test this; but they have not done so. I can speak only from careful clinical observation. There appears to be a mutual neutralization of quinin and pneumonia poisons. This in a measure tends to prevent cardiovascular (or sympathetic) paralysis, which is the most dangerous element of the morbid process. In cases seen early, a very few injections suffice, in some cases only one. In cases seen on the third day or later, more active treatment is needed; and, moreover, aid is needed to support cardiovascular (sympathetic) tone. This assistance is furnished by cocain, by pituitary, by epinephrin, and in less degree by camphor, by atropin, by strychnin, and even, when the quinin is used, by digitalis.

This last is a point to which I shall refer at length in a later paper. At present I shall content myself with the remark that the phenomenon seems to bear out the view that digitalis principles, like quinin, are chemically neutralized by the pneumonia poison; thus explaining the value attributed by certain observers to enormous doses of this drug in acute lobar pneumonia, and the common experience of its uselessness in ordinary dosage.

I have not used strophanthin, but from my recent experience with the latter in cases of auricular fibrillation, I should be inclined to give it a trial when the routine method fails—provided, however, that other symptoms do not contraindicate vagus stimulation.

As a rule, however, the systematic use of cocain or pituitary liquid, or both in alternation, renders it unnecessary to resort to other methods for this particular purpose; the chances being that in cases which fail to respond to these agents, the severity of the intoxication or the extent of the morbid anatomic changes in the lungs is too great to be overcome.[6] This may depend on the extreme virulence of the particular strain of pneumococcus or other microbe by which the infection is excited; on the association of several forms of microbes; or on a deficiency of resistance or recuperative power on the part of the patient, whether in the tissues, the blood-serum or the body-juices.

If we knew definitely the nature of this deficiency in a given case, we might be able to compensate for it by the use of an appropriate serum, containing complement or immunizing bodies, or phagocytic enzymes or whatever it might be that was lacking; but we have not yet arrived at that point of knowledge or the required degree of resourcefulness. Some of the serums that have been proposed might be useful. I cannot say, as I have had no experience in that direction. I have tried, however, to stimulate the powers of defense and restoration by the use of appropriate bacterial preparations and products. I can say positively that I have seen no harm from these. I believe that I have observed distinct and even amazing benefit; but I want to reserve the full discussion of this phase of the subject until I have completed some studies that are still under way. I prefer to use the bacterins after, rather than before, the fifth day; but cannot be dogmatic on this or any other feature of their use.

Concerning the great superiority of treatment by quinin and pressure-raising medicaments over all other routine or expectant methods yet proposed, I have not the slightest doubt. It has in my own hands cut the mortality of the severest cases in half. But this is not its only merit: The comfort, especially the relative ease of respiration of the patients, even of those who do not recover, is wonderful to see. The entire clinical picture is changed.

From the charts alone, of course this is scarcely evident. Little information can be drawn from these as to those signs and symptoms—the physiognomy, color, attitude, mental condition and general appearance of the patient; the character and progress of the physical signs; the character and frequency of the cough; the character of sputum; the characteristics of the respiration and cardiac action other than frequency, etc., etc.—on which the experienced physician bases his estimate of the gravity or progress of an individual case. The critic will have to accept the judgment of the observer that the conditions were such as to excite apprehension as to ultimate result, and that the medicaments were administered only when the state of the individual patient at the special time seemed to call for active therapeutic intervention. Necessarily but few charts can be reproduced for publication; but it may readily be seen that in some of the cases very few injections were given, and in some very many.

The point, however, to which especial attention may be directed, and which the charts all exhibit very well, is the effect on the blood-pressure, and even more than this, the effect on the Gibson pulse-pressure ratio, of the cocain or caffein, and of the pituitary preparation. It is most marked in the case of the latter agent. In private practice the latter is ordinarily to be preferred. In hospitals, mistaken ideas of economy sometimes lead trustees of institutions otherwise liberally managed to restrict the provision of expensive drugs (although they provide costly surgical appliances and surgical dressings without stint). This may prevent its use as freely as seems to be desirable.

Until recently I had reserved the treatment for cases in which active intervention was needed, permitting other patients to recover without it. And my statistics are based, therefore, on cases of at least moderate severity, and from those to the worst possible types. I now give the initial dose of quinin to every patient. In consequence, we have seen the mild cases become so much milder that they give no anxiety whatever, and require little further treatment beyond good nursing.

When bacterial therapy and serum therapy are sufficiently developed to be applied with precision in supplement to quinin, I confidently expect the mortality of pneumonia to become so small under the combined method that I hesitate to suggest a probable figure, lest I be deemed extravagant in my optimism.

In conclusion, a word as to the duration of treatment and the number of injections. The quinin injections are rarely continued beyond seventy-two hours, and the number of injections in this period (each, in most instances, containing 1 gm.) ranges from 1 to 15. In one exceptional case of double lobar pneumonia, twenty-two injections were given, with good result. The number of cocain or pituitary injections throughout the course of treatment ranges from 1 to 20. In an ordinary case—if there be such a thing—the number of quinin injections will be about 5 or 6, and the number of cocain and pituitary injections 3 or 4 each. But in this, as in all other features of the treatment, there must be individualization. The routine is a guide, not a fetish. And the dose of any and every agent is that which I have elsewhere laid down as a *general principle* —*enough* (to produce the effect desired) *and no more.*

1525 Walnut Street.

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[6] This is illustrated by chart published in International Medical Clinics, Vol. iii, series 22, p. 63.

THE HUMAN STOCK SHOW

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Under various names, such as "Baby Show," "Better Babies Show," "Baby Health Contest," etc., infants are competing for prizes on a basis of mental and physical development, as determined by tests and examinations conducted by physicians. These are virtually human stock shows.

The idea was conceived as a direct outcome of live stock shows, in several parts of the stock-breeding West simultaneously. The human stock show bears the same relation to race improvement that the live stock show bears to stock-breeding, and that the agricultural exhibit bears to scientific agriculture. It bridges the gap between scientific and practical eugenics and euthenics. It is of scientific value because of the statistics that may be collected. It is of practical value because it affords a means of instilling into the minds of the laity the fundamental principles of eugenics and euthenics.

Most of the entries are children of intelligent parents. The baby is brought to the contest to win a prize. If he does not win it, he is more fortunate than if he does, because his parents then make anxious requests for his score-card to see in what he has been deficient and what can be done to remedy the defects. They also ask what can be done to prevent these defects in future offspring.

They study euthenics exhibits, such as charts illustrating the relative mortality and morbidity of breast-fed and bottle-fed babies; artificial foods and their relative values; methods of modifying cow's milk; the sanitary care of milk; the model dairy; charts and statistics showing the relation of the house-fly to the infection of milk and to intestinal and other infectious diseases; the model nursery illustrating proper lighting, heating, ventilating, sanitary and artistic furnishings, beds and bedding, clothing, toys, pets, playthings, games, occupations, books, etc.; the first-aid medicine cabinet; dietary, including suggestions for school luncheons for children of school age; clothing for school-children; books for their home library; toys, games, occupations; the model public playground, etc. They read the educational leaflets on all these subjects and on the training of the adolescent. They listen to lectures on allied subjects.

They study eugenics exhibits, such as charts showing the transmission of insanity, feeble-mindedness, criminality, pauperism, alcoholism, blindness, deaf-mutism, tuberculosis, epilepsy, arthritis, heart-disease, genius, special talents, longevity, etc.; charts of special families, such as the Jukes, Kallikaks, tribe of Ishmael; statistics showing the hereditary and economic effects on the race of permitting and of restricting the propagation of the unfit, etc.; exhibits of rabbits, mice, guinea-pigs and Andalusian fowls, demonstrating the different principles of heredity. They read leaflets on eugenics and subsequently drain the libraries of literature on this subject.

Through these vitally concrete things brought to focus on the parent's own child, through literature, charts, and demonstrations and through the press reviews, the general public is stimulated to study eugenics and euthenics; to awaken to the consciousness that, by its own course, it can largely shape its own destiny and that what has been done to better the quality of animals can be done to better the quality of human beings by the intelligent application of the same biologic laws; to appreciate the economic value of intelligent control of propagation and environment conditions, and to substitute intelligent solicitude for the blindness that may be caused by parental love and pride. Young men and women are stimulated to consider heredity in choosing their mates. Children are stimulated to strive for mental and physical excellence.

This is a matter of fact, not of theory. The results mentioned are those which were observed to follow the show which was conducted as a eugenics department of the National Western Stock Show in Denver, January, 1913. It was the first of the baby shows to be placed on a high scientific basis, with the associated educational features, and this was largely due to the loyal support of E. M. Ammons, Governor of Colorado, and Fred P. Johnson, secretary of the National Western Stock Show, both eminent stock-breeders. The State Agricultural College cooperated to the extent of furnishing a very valuable eugenics exhibit. The magnitude and scope of the scientific and educational possibilities of the baby show make it worthy of the support of every individual, association or institution interested in race improvement.

On the other hand, the immense popularity and the prize-winning features are attracting all manner of promoters, advertisers, food manufacturers, etc., whose purposes are commercial and selfish. Under such management, it becomes a mere prize-winning contest; without associated educational exhibits, demonstrations, literature and lectures, it is practically useless and sometimes pernicious, in that the prizes are not fairly awarded, the parents are not furnished with duplicate score-cards, and the information they obtain is not accurate and may be harmful.

Up to the present the movement has been fostered largely by women. Its scope has been confined to a basis of euthenics, and even that has been of the mother's congress type, rather than of scientific standard. Their basis of examinations and tests has been so crude and wide of the essentials as to bring ridicule from such authorities as Charles B. Davenport, to whom the card was submitted. The American Medical Association has recognized it only to the extent of mentioning the work in the annual report of the Committee on Public-Health Education among women.

It is time that the movement come under scientific control; that the foremost scientists and physicians cooperate to put it on a basis of world education toward the improvement of the race rather than public-health education among women. If human stock is to be judged it should be done on the highest possible scientific standards. It should finally come to be fostered by the government as a matter of social economy; it would thus repeat the history of the child-welfare movement, now centered in the Child-Welfare Bureau at Washington, under the direction of Julia C. Lathrop.

The eugenics features should be under the control and direction of the eugenics section of the American Breeders Association, the euthenics features under the Child-Welfare Bureau. The president of the American Institute of Child Life, Byron W. Forbush, has already offered cooperation in the way of leaflets. Eminent scientists, such as G. Stanley Hall, David Starr Jordan, Charles B. Davenport, E. G. Titus and others only await its being established on a broad scientific basis, above petty interests, to lend their cooperation.

It rests with physicians to do this. Since the shows cannot be conducted without the services of physicians, it is within their power to control the basis on which the shows are placed. At present the person who is responsible for the good or bad results of a contest is the physician in charge of the scoring. He may choose the system of scoring to be used, see that all receive justice, and insist on the educational features. He can secure the cooperation of speakers, teachers of biology, etc., and obtain the use of various exhibits.

As in every other field, organized efforts result in far greater good than divided individual efforts. The only organization which can bring these shows under uniform scientific management, collect filled forms, summarize and publish statistics, cooperate in annual revisions of the scoring system until it is sufficiently perfected, and institute the proper educational features is an organized body of scientists and physicians.

Such an organization is being formed. An organization committee has been appointed whose members are Dr. W. W. Grant, Dr. Edward Jackson, Dr. W. A. Jayne, Dr. Melville Black, Dr. T. Mitchell Burns, Sanford Bell, A.B., A.M., Ph.D., and myself.

That part of the organization which will coordinate the work of the physicians will be organized first, so that it will be ready to direct the physicians who will be concerned in the shows which are to be a feature of the state fairs this fall.

The first step toward uniform action is the adoption of a better scoring system. The systems now in use have some serious faults. Definite figures are given for weight and measurement, whereas ratios are more important. Children of different race or geographic situation are of different stature, but the proportions remain practically the same with good development. For example, Western children are larger than Eastern. The relative values of various points is a matter of the greatest importance, and this has not yet been well worked out. The mental development should be tested with the greatest possible accuracy, and should be of equal value with the physical. In the forms in use, the mental development can be entirely canceled by a group of inconsequential anatomic defects.

The following is a system which has been worked out from that used in Denver, taking in any points of merit in other systems in use. It is proposed that it be adopted temporarily and original filled forms, or duplicates, sent to the committee together with suggestions for revisions by all who are interested. These will be summarized and put to vote. In order to secure ultimate scientific accuracy there will need to be a melting-pot for the ideas of a great many scientists, the observations of many who conduct contests, and for the data thus obtained.

Only the items are presented at this time. In its final form, the system will include definite standards, charts of eyes, ears, nose, mouth, chin, body proportions, sitting and standing postures, etc., and a mendelian-law chart.

OUTLINE OF SCORING SYSTEM

Entry Number.
Date.
Name.
Address.
Environment.
Entered by.
Address.

Individual and Family History and Record of Mental and Physical Characteristics and Conditions of ———, As Indicated By Tests and Examinations Conducted:

Date.
Town and state.
Under Auspices of.

Parents are requested to give the information asked in the history forms as these are questions of great scientific value, but this is not compulsory. They are not to be seen by those who make the examinations and tests, and cannot influence the awarding of prizes. All information received will be held as confidential.

Individual History

1. Entry No.
2. Name of child.
3. Address.
4. Environment: city———; town———; country———.
5. Sex———. Age, years, months, days.
6. Number in order of birth.
7. Born how long after last child?
8. Born how long after marriage of parents?
9. Age of mother when this child was born——; of father——.
10. Weight at birth, pounds. Condition at birth.
11. Nourishment:
    (a) Breast-fed———month to———month. Frequency.
    (b) Artificially fed———, month to———month. Frequency.
    (c) What food?
    (d) If not breast-fed, why?
    (e) Weaned at what age?
    (f) Care of feeding after weaning (excellent; good, fair, poor, to be determined by physician).
12. Sleep:
    (a) Amount in 24 hours first year, second year; third year.
    (b) Quality, first year, second year, third year.
    (c) At what hour has he been put to bed in the evening?
    (d) At what hours has he had naps during the day?
    (e) Has he slept indoors? Outdoors? Alone? With whom?
13. Activity: Normal———, excessive———, subnormal———.
    (a) Has this child been present at evening functions? To what extent?
    (b) Has he been romped with especially in the evening?
    (c) To what extent has he been entertained?
    (d) Has he been left to his own amusement?
    (e) What kind of toys has he had? Simple———; Elaborate———.
    (f) What kind of toys and what kind of play has he shown a preference for?
    (g) Kind and amount of discipline.
14. Illnesses: Indigestion; summer-complaint; bronchitis; pneumonia; infectious diseases; other complaints.

(Give age at time of attack, number, severity and recovery.)

15. Resembles which parent?
16. Peculiarities:
    (a) Physical.
    (b) Mental.

Family History

Father:

1. Name———; where born———.
2. Education.
3. Occupation:
    (a) At successive ages.
    (b) At present.
    (c) Self-supporting at what age?
    (d) Thrift, property, other assets.
4. Habits:
    (a) To what extent are alcoholic beverages used?
    (b) Kind and amount of recreation.
5. Health:
    (a) State of health between the ages of 7 and 17 years.
    (b) Diseases; chronic lung trouble; rheumatism; nervous diseases; spells; brain trouble.
    (c) Accidents, injuries, operations.
    (d) Has he ever been in a sanatorium, hospital or other institution for medical treatment? How long? What for?
    (e) What was his general state of health one year before the birth of this child?
    (f) What is his present state of health?
    (g) If dead, state cause of death; age at death.
6. Peculiarities:
    (a) Physical.
    (b) Mental.
    (c) Defects.
    (d) Talents.
7. Temperament.
8. Use of hands: right-handed? left-handed? Ambidextrous?
9. Environment during childhood.
10. Blood relation of wife? If so, what?
11. Descent of father's father; father's mother.
12. Occupation of father's parents.
13. Family tendencies, peculiarities or traits.
14. Family tendencies to disease; chronic lung trouble; rheumatism; nervous disease; spells; brain trouble.

Mother:

1. Maiden name. Where born.
2. Education.
3. Occupation:
    (a) Before marriage.
    (b) After marriage.
    (c) During pregnancy.
    (d) Self-supporting at what age?
4. Habits:
    (a) To what extent are alcoholic beverages used?
    (b) To what extent is tobacco used?
    (c) Kind and amount of recreation.
5. Health:
    (a) State of health during adolescence.
    (b) Has she had any of the following diseases: chronic lung trouble, rheumatism, nervous diseases, spells, brain trouble?
    (c) Accidents, injuries, operations.

   (*d*) Has she ever been in a sanatorium, hospital or other institution for medical treatment? How long? What for?
   (*e*) What was her general state of health one year before the birth of this child?
   (*f*) What is her present state of health?
   (*g*) If dead, state cause of death. Age at death.
6. Age at birth of first child; number of births; number of children living; miscarriages.
7. Peculiarities:
   (*a*) Physical.
   (*b*) Mental.
   (*c*) Defects.
   (*d*) Talents.
8. Temperament.
9. Use of hands: right-handed? left-handed? ambidextrous?
10. Environment during childhood.
11. Descent of mother's father, of mother's mother.
12. Occupation of mother's parents.
13. Family tendencies, peculiarities or traits.
14. Family tendencies to disease; chronic lung trouble; rheumatism; nervous diseases; spells; brain trouble.

TESTS AND EXAMINATIONS (EACH ITEM JUDGED ON A BASIS OF 100 PER CENT.)

PHYSIOLOGIC GROUP

Body Formation and Development:
1. Head, general shape and symmetry.
2. Hair: color; texture; condition.
3. Eyes: color; size; position; shape; pupillary distance; pupil; iris; muscular control; lids; lashes; brows.
4. Ears: size; position; shape.
5. Nose: position; shape.
6. Lips: shape; fulness.
7. Chin and lower jaw.
8. Formation of hands.
9. Formation of feet.
10. Lines of spine: lateral; anteroposterior.
11. Bilateral symmetry.
12. Standing position.
13. Sitting position.
14. Weight, pounds; height, inches; ratio.
15. Length of arm: forearm: thigh: trunk: extremities; circumference of head; chest; abdomen; ratio.
16. Muscular development.
17. Conformation of bones.
      Total ——.
      Average ——.

Efficiency of Special Senses:
1. Eyes: squint; history; simple objects; test-card
2. Ears: secretion; odor; history of earache; watch test.
      Total ——.
      Average ——.

Efficiency of Nutritive and Muscular Systems:
1. General tonicity of body.
2. Strength of muscles.
3. Color and condition of skin and appendages; firmness of flesh; amount and quality of fat.
4. Head: shape; fontanels.
5. Long bones: shape and epiphyses.
6. Chest: shape; ribs.
7. Abdomen.
8. Teeth: time of appearance; number; shape; size; position; condition.
      Total ——.
      Average ——.

Efficiency of Respiratory and Circulatory Systems:
1. Formation and condition of air-passages:
   (*a*) Nose: shape; patency.
   (*b*) Mouth: alveolar processes and teeth; hard palate.
   (*c*) Throat: soft palate; tonsils; adenoids.
   (*d*) Mucous membranes.
   (*e*) Chest: type.
   (*f*) Reflex nervous phenomena.
2. Circulatory system:
   (*a*) Heart.
   (*b*) Circulation.
      Total ——.
      Average ——.
      Total average ——.
      Average for physiologic group ——.

PSYCHOLOGIC GROUP

1. Facial expression.
2. Speech.
3. Mental alertness.
4. Attention.
5. Muscle control:
   (*a*) Fundamental.
   (*b*) Accessory.
6. Acuity of senses, particularly sight and hearing.
7. Temperament: phlegmatic; slow; nervous.
8. Disposition.
9. Use of hands: right-handed? left-handed? ambidextrous?
10. General formation of head: brachycephalic? dolicocephalic? mesocephalic? cephalic index.
      Total ——.
      Average for psychologic group ——.
      Final average ——.

(Signed) ——, Official Scorer.

ADVANTAGES

The advantages of this system are:

The order of the examinations is arranged to suit the convenience of both the child and the examiner (the psychologic group will be recorded first).

The groups are arranged with regard to time, each requiring ten minutes.

The items are all judged on the same basis, that is, 100 per cent.

The relative values are taken care of by the system of grouping and averaging. The figures of each of the four parts of the physiologic group are separately added and averaged, the average being carried into the second column. These are then added and averaged, the result being the general average for the physiologic group. The figures of the psychologic group are added and averaged to obtain the general average for the psychologic group, and the final score is obtained by averaging the final figures under the physiologic with those of the psychologic. In this way an exact record is kept of all points, but the anatomic defects, as such, receive a very low value, while those which affect the efficiency of the individual receive a high value.

The psychologic group was arranged by Sanford Bell, who has for many years been identified with genetic psychology in the educational field, holding professorships in the University of Valparaiso, State University of Indiana, Mount Holyoke College, State University of Colorado and elsewhere. As a fellow of Clark University he made thousands of tests on young children, schoolchildren and adolescents, the summarized results of which are quoted in G. Stanley Hall's "Adolescence" and in many other authoritative works.

Physicians will be provided with directions for making the tests. Parents will receive leaflets of useful information.

640 Metropolitan Building.

WHAT RELATION, IF ANY, HAVE THE FAUCIAL TONSILS TO PULMONARY TUBERCULOSIS? *

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CHICAGO

In 1878 Cohnheim suggested that tuberculosis of the cervical lymph-nodes might be the result of primary tuberculosis in the buccal or pharyngeal mucosa or tonsils. In 1879 Orth in some feeding experiments with guinea-pigs produced tuberculosis in the cervical lymph-nodes, and in one instance in the tonsils. Baumgarten confirmed these results in 1884. Cornil and Ranvier the same year described the lesions in tuberculous tonsils in their manual of pathologic histology, and Strassmann the same year mentions the frequency of tonsillar tuberculosis in phthisical patients (thirteen in twenty-one cases). This seems to have been the beginning of the special literature on this subject. In 1885 Abraham wrote on tubercle of the tonsil and in 1891 Dmochowski concluded that tuberculous deposits in the faucial and lingual tonsils often resulted from auto-infection. In 1892 Conoreur described the probable relation of tuberculosis of the tonsils to the same disease in the cervical lymph-nodes. Schlenker in 1893 published observations on man which appeared to indicate that the tonsils are sometimes infected primarily by bacilli in food, but more often by bacilli in sputum from the lungs. Krückmann, 1894, confirmed the observations of Strassmann, Dmochowski and Schlenker, and Dieulafoy in 1895 showed that tuberculosis of the tonsils often existed without cervical symptoms. For this early history of the subject I am indebted to Jonathan Wright, who kindly furnished me an advance copy of the 2d edition of his "History of Laryngology," from which this has been compiled.

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* Read before the American Climatological Association, Washington, D. C., May, 1913.

An article by Prof. G. Sims Woodhead[1] calling attention to the possibility of tuberculous infection through the tonsils appeared eighteen years ago. He endeavored to show that the faucial and pharyngeal tonsils are important channels of infection in this disease. He showed also that the lymph-nodes of the neck may become infected with tuberculosis through the faucial tonsils while the tonsils themselves may not be involved in the process; that is, the tubercle bacilli may find entrance through the tonsil and pass on by the lymphatics to the lymph-nodes while the tonsils themselves escape injury. Subsequent observations seem to have confirmed this view; although Cheyne[2] contended that the faucial and pharyngeal tonsils did not play an important part in the etiology of cervical adenitis.

Jonathan Wright[3] pointed out the liability to error in the various methods for detection of tuberculosis in lymphoid tissue; for it is very difficult to detect tubercle bacilli in these structures even when they are studded with tubercles visible to the naked eye; and it is the exception to find them in the scanty anatomic tubercles of latent tuberculosis.

Arthur Latham[4] in the same year stated his belief that the primary infection in tuberculosis is by the lymphatic system and that it spreads from the cervical to the bronchial lymph-nodes. This view, however, appears to have been refuted by subsequent research. In a personal letter of November, 1912, Jonathan Wright says "I think it has been pretty conclusively shown that the infection is not through the cervical lymphatics, which do not communicate with the pulmonary lymphatics" but that the whole of the infection "is poured into the general circulation."

Nevertheless Latham's views of the etiology of pulmonary tuberculosis are in large part correct according to most pathologists of the present time. I quite agree with him in the statement that "there can be no doubt that predisposition, hereditary and acquired character of the soil are most important factors."

In the letter already referred to, Jonathan Wright says in connection with the quotation given above, "This makes the infection of the lungs so far as the agents of it go through the tonsil, an affair of local predisposition."

Latham stated that tuberculosis of the bronchial lymph-nodes is the most constant lesion found; and that in the majority of cases, the tuberculous process is more advanced there than elsewhere. But he thought the lungs were most frequently involved first, and that the disease spread by the lymphatics to the bronchial lymph-nodes. He believed, however, that the primary infection was by the lymphatic system. He thought that when the bronchial lymph-nodes became involved first the disease might spread from them to the lungs by continuity, by ulceration into a bronchus or into a blood-vessel, or by the lymphatics but against the supposed lymphatic stream. He believes that in children under 3½ years of age, pulmonary tuberculosis is usually dependent on infection of the bronchial lymph-nodes from which it spreads to the lungs; but that after 4 years of age, as in adults, the lungs are involved first and the process spreads from them to the bronchial lymph-nodes.

St. Clair Thompson[5] calls attention to the infrequency of involvement of the nares in patients suffering from pulmonary tuberculosis (only once in 450 cases), although it is generally conceded that the infection is usually aerogenous.

In necropsies of 100 cases the pharyngeal tonsil showed tuberculosis in only 6 per cent. on microscopic examination, although inoculation experiments demonstrated its presence in nearly 20 per cent. The larynx was involved in 30 per cent. The discrepancy between different observers is due largely to the methods of examination. As already shown by Wright, tubercle bacilli are difficult to demonstrate in lymphoid structures although the histologic changes may be very apparent. In the examination of seventy-eight cases of pulmonary tuberculosis Brieger found no tubercle bacilli either on the surface of the tonsils or in their crypts but histologic evidence of the disease in the tonsils was present in 6 per cent. Thompson believed that the infection could take place through the tonsil but did not think this common and he called attention to the experimental work on pigs by Sidney Martin which demonstrated that the infection could take place through the tonsil without involving this organ in the tuberculous process.

J. L. Goodale[6] claims that chronic absorption of bacterial products of decomposition is not likely to occur through the pharyngeal or lingual tonsils but thinks it does frequently take place through the faucial tonsils.

L. Kingsford[7] writes that tuberculosis of the tonsils is comparatively frequent but he does not think this often the primary seat of the disease. He considers tuberculosis of the tonsils usually secondary to foci in other places, and thinks that the tonsils, especially in adults, become infected through the sputum or by the blood-stream. He states, however, that primary infection of the tonsils is not uncommon in children, in whom he thought it might occur either by inhalation or from infected food. In the same connection it is stated that in children Friedman found evidence of tuberculosis in 11 per cent. out of 145 cases and Latham by inoculation experiments found it in 15 per cent. of 48 cases; while Schlenker and Wright have found tubercle bacilli in adjacent cervical lymphatics, which seemed to have passed through the tonsils without any involvement of the latter.

George B. Wood[8] states that secondary infection of the tonsils takes place readily in pulmonary tuberculosis. Seven different observers in examining 136 bodies dead of pulmonary tuberculosis found the tonsils involved in 69 per cent. Twenty-three different observers, however, in examining 1,671 cases found primary tuberculosis of the tonsils in only 5.2 per cent. He believed that in pulmonary tuberculosis, few, if any, are caused by infection through the tonsils, but that in 90 per cent. of the cases of tuberculous cervical adenitis in children the faucial tonsils were the portals of entry. He argues that it seems scarcely possible that tubercle bacilli could gain entrance through the normal mucosa of the mouth and fauces which has a squamous epithelium especially efficient as a protective covering.

The surface of the tonsils is covered with the same epithelium, but in the invaginations which form the crypts the epithelium is so changed that it loses this

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1. Woodhead, G. Sims: Lancet, London, Oct. 27, 1894.
2. Cheyne: Brit. Med. Jour., 18[illegible], i, 1038.
3. Wright, Jonathan: New York Med. Jour., 1900, lxxi, 504.
4. Latham, Arthur: Lancet, London, Dec. 22, 1900.
5. Thompson, St. Clair: Practitioner, London, 1901.
6. Goodale, J. L.: Brit. Med. Jour., 1903, ii, 1141.
7. Kingsford, L.: Lancet, London, 1904, i, 89.
8. Wood, George B.: The Significance of Tuberculous Deposits in the Tonsils, The Journal A. M. A., May 6, 1905, p. 1425.

normal protective function. If Wood is correct, there could be very little if any chance for the entrance of infective material through the mucous membrane covering the normal tonsil, in which the crypts are negligible; but with enlargement of the tonsil and deepening of the crypts the opportunity for the entrance of bacilli would be very greatly increased. In other words, absorption of tubercle bacilli is not at all likely to occur through the tonsils except when they are enlarged. The larger the tonsil the deeper the crypts, with a correspondingly increased chance for absorption of any infective organism or other minute substances.

J. L. Goodale[9] calls attention to the demonstration by Theobald Smith that, in cattle, tubercle bacilli may enter the system through the mucous membrane of the mouth and throat without leaving any visible trace at the point of entrance. He also points out the difference in behavior of cervical adenitis of tuberculous and nontuberculous origin under certain conditions. He says that tuberculous cervical adenitis may exist in association with tubercle bacilli in the tonsils with or without visible changes in these organs; and that removal of such tonsils may have no effect on the cervical lymph-nodes. But there are other cases of cervical adenitis associated with distinct enlargement of the tonsils in which the irritating material seems to be generated in the tonsils. In these cases removal of the tonsil is followed by prompt relief. From the foregoing it would appear that removal of enlarged tonsils may tend to prevent the absorption of tubercle bacilli, but that after the damage has been done this operation may have no influence on the tuberculous cervical glands.

J. L. Goodale[10] says that the faucial tonsils are the most favorable points of entrance for micro-organisms and that previous pathologic alterations in these structures favor such infections. Yet he thought that disproportionate emphasis had been laid on these pathologic alterations as compared with the importance of the receptivity of the host. I quite agree with him in this view and fully believe that the degree of resisting power of the host is by far the most important factor in the development of tuberculosis. The tubercle bacillus seems constantly with us and it has been shown to be present in 97 per cent. of practically all adult human beings. It probably is present in every one whether or not there have been pathologic changes in the mucous membranes. But if the individual resistance is good it has little or no effect; whereas, whatever lessens this resistance, be it diseased tonsils or anything else, favors the development of more or less serious tuberculous processes.

Jobson Horne[11] considering the channels of tuberculous infection asserts that the infection may occur through the tonsils from food; but he thinks that in the vast majority of cases infection of the lungs takes place through tubercle bacilli in the inspired air either directly or secondarily through the bronchial lymph-nodes.

Osler[12] says much has been written of late about the relation of the tonsils to tuberculosis, especially with regard to its importance as a portal of entry, but even yet after the study of hundreds of cases there is no great unanimity of opinion. He quotes figures which show primary infection of the tonsils in from 3 per cent. to 6 per cent. of 200 cases studied by Piffe and Rethi.

Goodale[13] is quoted as having found quite a large percentage of tuberculous tonsils associated with cervical adenitis, which was demonstrated by clearing up of the condition of the lymph-nodes on removal of the tonsils. This does not appear to have been the common experience, although very many physicians, since Heberden's observations on rheumatism in 1804, have demonstrated the relation of the tonsils as a portal of entry to the infection in various diseases.

In the *British Medical Journal* (Nov. 19, 1910, p. 1622), the relation of enlarged tonsils to tuberculosis is discussed but nothing new is added.

E. C. Sewall[14] states that between 1,600 and 2,000 cases of primary tuberculosis of the tonsils have been studied by various observers, which have accounted for a little over 5 per cent. of all cases of tuberculosis coming to necropsy. He asserts that there are no distinguishing clinical signs of tuberculosis in the tonsils except in those cases in which ulceration has occurred. In 772 pairs of enlarged tonsils removed and examined in the laboratory of the Cooper Medical College, only 3.9 *per cent.* were found to be tuberculous. As Naegeli found tuberculosis in 97 per cent. of all adult bodies, this small percentage in diseased tonsils appears to have no significance whatever, and the only wonder is that a much larger percentage was not found.

As showing the relation of infected tonsils to cervical adenitis he says that of 160 cases of diseased tonsils the cervical lymph-nodes were also slightly or much affected in 68, and that in 3 of these both the cervical lymph-nodes and the tonsils were found to be tuberculous. In 57 of these the enlargement of the cervical lymph-nodes disappeared when the tonsils were removed. In 6 they subsided, but returned; but in 5 the cervical adenitis was not benefited by the operation.

It is reported[15] that it has been repeatedly proved that in a hundred children having enlarged tonsils and adenoids there are appreciably fewer cases of tuberculosis than in a hundred children with normal throats. The significance of this, if true, is obvious but I have been unable to verify the statement and the author of the article has failed to respond to my personal letter of inquiry; therefore, I am led to believe that there has been some mistake.

I have in my files of histories of private patients over 25,000 carefully kept records, more than 10 per cent. of which are of tuberculosis. In these cases careful examinations were made of the nose and throat as well as of the chest, and the histories were carefully taken, for heredity, previous diseases, enlarged lymph-nodes, general condition at the time of the examination and indeed everything that might have any bearing on the origin or course of the disease. Dr. W. S. Bracken, one of my associates, employing all his spare time for several months and assisted by some of the other physicians in my office, has gone over those records carefully and analyzed the findings with a view to discover, if possible, a relation between the tonsils and laryngeal or pulmonary tuberculosis.

He took at random 100 cases (with no selection except to assure himself that the blanks had been thoroughly filled out), thus giving a fair average of the whole. From the records of non-tuberculous patients who consulted me for various diseases having no relation to tuberculosis such as functional and organic disease of the heart, asthma, simple bronchitis, pleurodynia, emphysema, pharyngitis, rhinitis and laryngitis, he took at random 100 other records for control thus making a fair analysis of my case records of about 25,000 different private patients. These records are far and away more complete and accurate than those of hospital patients. His analysis shows that 26 per cent. of the tuberculous patients had some macroscopic change in the tonsils varying from slight enlargement to marked hypertrophy, ulceration, or other evidence of disease. In only 4 per cent. was there any record of cervical adenitis and in only one of these was there any change in the tonsils, which were noted in that case to be slightly enlarged.

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[9] Goodale, J. L.: Boston Med. and Surg. Jour., November, 1906, clv, 278.

[10] Goodale, J. L.: Tr. Am. Laryngol. Assn., 1907.

[11] Horne, Jobson: Jour. Laryngol., Rhinol. and Otol., 1907, xxii, 28.

[12] Osler, William: Modern Medicine, 1907, iii, 223.

[13] Goodale, J. L.: Johns Hopkins Hosp. Bull., November, 1908.

[14] Sewall, E. C.: Histologic Examination of the Faucial Tonsils with Reference to Tuberculosis, THE JOURNAL A. M. A., Sept. 9, 1911, p. 868.

[15] Keene, T. Victor: Tuberculosis in Children, Jour. Indiana State Med. Assn., Nov. 15, 1912, p. 467.

Among the control cases 46 per cent. of the patients had enlargement or other evidence of disease of the tonsils, nearly twice as many as in tuberculous cases; and not one of them had cervical adenitis. So far as these records go they show that affections of the tonsils are much more frequent among non-tuberculous than among tuberculous patients; but that cervical adenitis, while comparatively infrequent (4 per cent. only) in tuberculous patients, is much less common in non-tuberculous patients. It is a matter of surprise to me to find that in only one of the cases of cervical adenitis was there even the slightest evidence of disease of the tonsils.

Ten or fifteen years ago it was quite commonly believed that disease of the tonsils was a frequent cause of pulmonary tuberculosis; but subsequent research appears to have proved that tubercle bacilli may enter and pass through the tonsils and cause disease of the cervical lymph-nodes while the tonsils themselves may escape all injury; and this research has also shown that there is no direct connection between the cervical lymph-nodes and the pulmonary lymphatics, and therefore, that involvement of the lungs associated with cervical adenitis must be a systemic infection rather than a result of the disease of the lymphatics.

From a thorough study of the literature and from an examination of my own records, I am forced to accept as correct the consensus of opinion, which now fully sustains the personal views of Jonathan Wright, who wrote me, in November, 1912, saying: "To tell the truth, I do not believe there is any relation between the tonsils and pulmonary tuberculosis."

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DIPLOSAL—ITS TOXICITY *

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Diplosal, or salicylo-salicylic acid $(OH.C_6H_4COO.C_6H_4COOH)$, is a compound obtained by the condensation of two molecules of salicylic acid, a phenol group of one molecule reacting with the hydroxyl group of the other molecule with the elimination of water thus forming the salicylic ester of salicylic acid. When decomposed by hydrolysis it takes up water, and 100 parts of diplosal yield 107 parts of the salicylic acid.

This substance was submitted to the Council with the claim that it was superior to salicylic acid and the other salicylates because it was free from all the undesirable side effects of those substances. Diplosal is insoluble in water and nearly so in dilute acids, so that it was assumed by the manufacturers that it would produce no undesirable effects on the stomach. When acted on by alkalies it is decomposed with the formation of an alkali salicylate. Thus if sodium bicarbonate be used the result is the formation of sodium salicylate.

It is the purpose of this work to show that the drug, if given in the same manner as the other salicylates, produces the same symptoms of toxicity and with equal severity. The drug was administered by mouth in capsules and no alkali was given with it. Especial attention was directed to the side action—the aural symptoms and the gastric effects—nausea and emesis. *The present series, although it is too small to allow* an exact estimate of the relative toxicity of the different salicylates, shows very clearly not only that diplosal is toxic, but also that much smaller doses suffice to produce the toxic effect than are required with sodium salicylate.

COMPARISON OF EFFECTS OF DIPLOSAL, SODIUM SALICYLATE AND OIL OF GAULTHERIA

Case	Age	Sex	Date	Drug Used	Single Dose, gr.	Total Amt. Taken, gr.	Toxic	Tinnitus	Nausea	Vomiting
9,250	35	M	2/25/10	Sod. Sal.	20	340	+	+	+	+
			3/ 2/10	Diplosal	10	40	+	+	+	+
9,280	24	M	3/ 3/10	Diplosal	10	200	+	+	+	—
9,290	16	F	3/ 3/10	Diplosal	10	70	+	+	+	+
			3/ 9/10	Sod. Sal.	20	120	+	+	+	+
8,910	35	M		Diplosal	5	45	+	+	+	+
8,916	15	M		Diplosal	5	45	+	+	+	+
9,026	19	F	1/ 3/10	Diplosal	10	40	+	+	+	+
9,010	19	M	11/12/09	Diplosal	10	100	+	+	+	+
9,051	54	M	11/28/09	Diplosal	10	120	+	+	+	+
				Sod. Sal.	20	140	+	+	+	+
				Diplosal	10	t.i.d.	*+	*+	*+	*+
9,148	15	F	1/ 4/10	Ol. Gaul.	10**	510**	—	—	—	—
			1/11/10	Sod. Sal.	20	200	+	+	+	+
			1/15/10	Sod. Sal.	10	150	+	+	+	+
			1/18/10	Diplosal	10	100	+	+	+	+
9,168	40	M	2/ 2/10	Sod. Sal.	20	220	+	+	+	+
			2/10/10	Diplosal	10	140	+	+	+	+
9,174	19	M	2/ 7/10	Sod. Sal.	20	240	+	+	+	+
			2/13/10	Diplosal	10	140	+	+	+	+
			2/19/10	Diplosal	10	160	+	+	+	+
10,868	40	M	9/ 3/11	Sod. Sal.	20	200	+	+	+	+
			9/ 4/11	Sod. Sal.	20	Single dose and the *patient vomited.*				
			9/ 5/11	Sod. Sal.	300	by rect.	+	+	—	—
			9/ 8/11	Diplosal	10	60	+	+	+	+
0,350	8	M		Diplosal	10	110	+	+	+	+
10,832	17	F		Diplosal	10	210	+	+	+	+
0,347	10	F		Diplosal	10	120	—	—	—	—
9,304	41	F		Diplosal	10	150	—	—	—	—
9,227	45	F	2/10/10	Diplosal	10	80	+	+	+	+
			2/15/10	Sod. Sal.	20	130	+	+	+	+
S	29	M	4/ 9/11	Diplosal	10	60	+	+	+	+
			4/11/11	Diplosal	10	50	+	+	+	+
F	15	F	10/23/11	Diplosal	10	170	+	+	+	+
G. S.	8	M	12/22/11	Diplosal	5	40	+	+	—	—
E. B.	5	M	1/ 2/12	Diplosal	5	80	+	+	+	+
N. S.	3	M	1/ 2/12	Diplosal	5	40	+	+	+	+
M. S.	13	F	12/20/11	Diplosal	5	75	+	+	—	†
			12/21/11	Diplosal	5	5	+	+	+	—
			12/28/11	Diplosal	5	100	+	+	+	—
V. N.	9	F	12/28/11	Diplosal	5	70	+	+	+	—
M. R.	13	M	12/20/11	Diplosal	5	70	+	+	+	‡
O. P.	5	M	12/22/11	Diplosal	5	75	+	+	+	—
S. E.	9	F	12/23/11	Diplosal	5	60	+	+	+	—
R. S.	7	M	12/23/11	Diplosal	5	60	+	+	+	§
T. Q.	5	M	12/28/11	Diplosal	5	70	+	+	+	§
F. P.	9	M	12/26/11	Diplosal	5	75	+	+	+	§

*These symptoms were present on the fourth day, with vertigo.

**Minim.

†Was drowsy next day with an acetonuria and was given 30 grains of sodium bicarbonate.

‡Sick for 24 hours. Drowsiness. sighing respiration, acetonuria and had to be given alkali by mouth and bowel.

§All had severe pain in the epigastrium.

Unless otherwise stated the drugs were administered every hour until toxic symptoms appeared.

It may be said that in the medical wards of Lakeside Hospital, Cleveland, and allied institutions, it is customary to administer salicylates to the "toxic" point in rheumatic fever and its manifestations, irrespective of the relief of the symptoms or the size of the dose. Sodium salicylate was administered in doses of 20 grains, and diplosal in doses of 5 or 10 grains, the dosage being repeated every hour till toxic effects appeared. In this series of cases (thirty in all with thirty-five administrations of the drug) the average "toxic" dose was 92.2 grains[1] as compared with 190 grains in eleven administrations of sodium salicylate. There has been no attempt made to compare their curative efficiency, but diplosal was satisfactory from this standpoint.

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* Investigation conducted at the request of the Committee on Therapeutic Research, Council on Pharmacy and Chemistry, American Medical Association.

Out of the thirty cases there were two in which, owing to the large amount taken without any result whatsoever, the drug was stopped, making 6 per cent. that showed no toxic effect. The other twenty-eight cases, or 91 per cent., showed severe and persistent tinnitus aurium. Two, or 6 per cent., had no gastric symptoms while nine, or 30 per cent., had only nausea.

In conclusion one must admit that diplosal is, like all the salicylates, toxic, if given in large doses; and that it does require much smaller doses to produce the toxic effect.

3849 Prospect Avenue.

A NEW AND SIMPLE METHOD OF TRANSFUSION*

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AND

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Every surgeon experienced in arterial surgery appreciates the technical difficulties in transfusing blood from one individual to another. Even after getting donor and recipient connected by whatever method one is using, how common a remark is the following: "Is it running?" and its answer, "I think so," or "I'm not sure." The quantity of blood transfused is always uncertain. It is probably always overestimated. A little is usually enough, probably not more than two ounces in newborn babies. The danger of a septic wrist to the donor is no small risk, although it seldom happens. It is extremely hard to get the patients together without a break in asepsis. Most men do not wear gloves when doing a transfusion—no doubt a small matter—but with the following method one does wear gloves and a perfect asepsis is easily maintained. By the ordinary method the discomfort of the surgeon is frequently great, since he is confined in a cramped position for a long time. The method to be described we believe eliminates practically all of these difficulties.

One of us has had considerable experience with transfusion by the various methods, as an assistant to Dr. J. C. Hubbard, and had thought of tubes for attaining the results. The other of us has for a number of years used glass cylinders with a cannula sealed or drawn out at one end and bent at right angles to the long axis of the cylinder, to draw and preserve blood aseptically. We are indebted to Dr. W. J. MacNeal, formerly of the University of Illinois, for acquaintance with the tube in this form. A tube involving some of the same features as the one to be described has been devised and used by us to collect blood-plasma and to preserve it in fluid condition for hours or days.

The tube (Fig. 1) consists of a glass cylinder of whatever capacity desired, closed at the upper end by a cork stopper, a side tube a little below the cork, and a cannula leading from the bottom of the cylinder. The cannula must join the cylinder at such a position that it will lead from the upper side of the cylinder when the latter is placed on its side with the side tube uppermost (Fig. 2). The cannula bends downward just after leaving the cylinder and then at right angles to the plane formed by the long axis of the cylinder and the side tube. From the last bend the cannula should not be more than two or three inches long, should taper gradually, and terminate in a beveled and burnished point about 2 or 3 mm. in diameter.

A small piece of pure, clean paraffin (melting-point 50 C., 122 F.) is placed in the cylinder and the cork pushed into place. The whole cylinder is then wrapped carefully in a towel, placed on its side in an autoclave and sterilized in the same manner as are dressings. At any time before the operation, or at the time of the operation, the sterile tube is unwrapped by the surgeon and is held above the flame of a Bunsen burner, alcohol lamp, or other source of heat, and carefully revolved until the melted paraffin has covered all portions of the inner surface of the cylinder, cork, and the side tube as far as the constriction. Finally the excess is allowed to run out of the cannula while the tip is held against a sterile gauze sponge. To avoid excessive crystallization of the paraffin, the cylinder should be cooled as quickly as possible by being brought into contact with the operator's hands A small piece of sterile absorbent cotton is next loosely inserted into the side tube as far as the constriction, to prevent contamination from the air when the pump is applied as described below. The cylinder is now ready for use. Before attempting to use this tube for the first time, the operator should practice lining it with paraffin until he is sure of his ability to do it effectively.

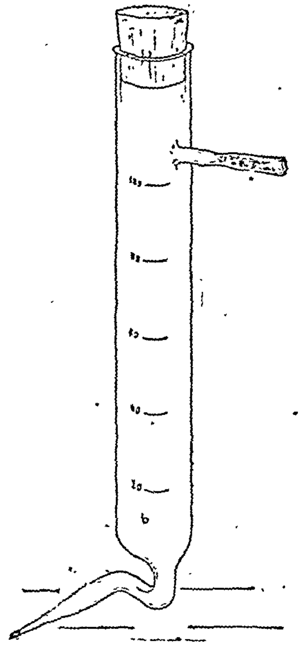
Fig. 1.—Tube of glass cylinder closed at the upper end with cork stopper; a side tube below cork and cannula leading from bottom of cylinder.

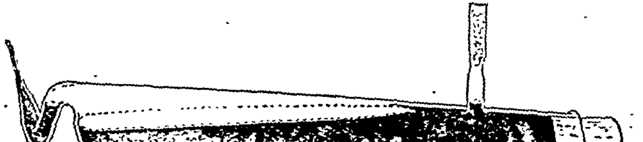
Fig. 2.—Tube, with blood withdrawn from artery, put in position to prevent blood from running out from the cannula while being inserted into the vein.

The tube has been used successfully on a number of animals all of which recovered perfectly. Rabbit's blood was found to remain in the tube from eight to ten minutes before beginning to clot. Several cats were transfused, the blood being taken from the carotid artery and injected into the external jugular vein. In one case 40 c.c. of blood were kept in the tube, not connected with the cat, for seven minutes and then injected into the circulation without difficulty or bad after-effects. In this case time was taken to dissect out the vein after the blood had been drawn into the tube.

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[1] There were fifteen administrations of diplosal to patients above 16 years, with average toxic dose of 101 grains; and eighteen administrations to children (15 years or younger) with average toxic dose of 76 grains.

* From the Department of Comparative Pathology, Harvard Medical School, and the General Surgical Service of the Children's Hospital, Boston.

Through the kindness of Dr. James S. Stone, surgeon to the Children's Hospital, Boston, and of Dr. W. E. Ladd, Assistant Surgeon, in whose service this case arose, an opportunity was given to put the method to a practical test.

REPORT OF CASE

Patient.—A boy, 10 years old, admitted April 25, 1913. Diagnosis, strangulated hernia. In the preceding October this child had had pneumonia and, by the mother's statement, at that time vomited a large amount of fresh blood, also passed black stools for about three weeks. From this time he had never regained his full strength. On admission, a large strangulated hernia was discovered and at operation was found to contain a large bunch of gangrenous omentum. There was also considerable free pus in the sac. The gangrenous omentum was removed and, because of evidence of peritonitis, the abdomen was opened and found to contain a large amount of pus. The abdomen was drained through the abdominal incision and also through the inguinal incision. There had been a considerable hemorrhage from the stump of the omentum. The child's condition was very poor. On May 8, 1913, it was necessary to operate again for an abscess. On removal of the wick and introduction of a finger into the wound, a very smart hemorrhage took place, partly from granulations and partly from the omentum. A piece of omentum was tied off and removed and further hemorrhage controlled by packing. No abscess was found. The child's condition was very unsatisfactory and there was marked suppression of urine, the twenty-four-hour amount being about 10 ounces; pulse and temperature high and irregular. The kidneys were excreting less than one-half of the fluids taken.

Transfusion.—On May 29, 1913, a transfusion was done, blood being taken from the mother. The technic was as follows: Under cocain, 0.5 per cent. for the child and 1 per cent. for the mother, the median basilic vein of the boy and the radial artery of the mother were exposed in the usual way. The vein was tied off distally and a Crile clamp applied proximally. The artery of the donor was treated in a like manner. The artery was then transfixed with a cataract knife and a slit made, into which the cannula of the tube was inserted and the clamp opened. A tie around the cannula is not necessary. The tube was held vertically and in forty seconds contained a little over 85 c.c., practically 3 ounces, of blood, all that was desired in this case. The cannula was withdrawn, an assistant closing the clamp at once. The tube was then placed in the position shown in Figure 2, to prevent the blood from running out from the cannula while it was being inserted into the vein. The peculiar bend in the cannula prevents it from emptying itself of blood and avoids the injection of air. As the cannula was entering the vein it was again raised to a vertical or oblique position. After insertion into the vein and removal of the clamp an ordinary actual cautery bulb-pump was attached to the side tube. With very slight air-pressure the flow of the blood was constant. The cannula was removed before it had emptied itself so that no air should enter. The time between the withdrawal of the tube from the artery and insertion into the vein was fifty seconds. The time from insertion into the vein until the three ounces had passed into the child's circulation was fifty seconds. The entire time from insertion into the artery of the donor until withdrawal from the vein of the recipient was two minutes and twenty seconds. The child promptly appeared of better color and the veins on the backs of his hands filled out. There was no change in the donor's condition. The child's pulse increased from 96 to 120, probably because of excitement. He complained of hunger at once. Hemoglobin tests were not made. Next morning the patient was better; pulse was down and temperature also. He felt stronger felt better and had passed double the quantity of urine he had been passing. He has improved steadily since and has been transferred to the Convalescent Home.

In using this method one should be very careful not to injure the vessels, picking the tissues away from them rather than handling the vessels themselves. We consider the use of a cataract knife, instead of fine scissors, to open the vessels extremely important, as it is very necessary not to injure the vessels or leukocytes. The knife makes a beautiful, sharply outlined opening. It is also important to pass the end of the cannula beyond the site of the Crile clamp. The slit is held open by small hooks such as are used in doing transfusion by other methods. Gentleness is the essential factor, as in all blood-vessel surgery.

It is very easily seen how simple and easy the performance of transfusion becomes by this method. The manner in which the blood is obtained is a great factor in its not clotting. With sufficient care not to injure the vessels and to have the entire tube thoroughly lined with paraffin we believe that no difficulty from the formation of fibrin ferment will be experienced if the operation consumes no more than a reasonable amount of time.

POINTS ACCOMPLISHED

The advantages gained are: (1) the elimination of the uncertainties and usual technical difficulties of direct transfusion; (2) the ability to measure the amount of blood transfused, and (3) the ability to regulate the rate of flow.

We fully appreciate that the method has not been sufficiently tried out, but it was so successful in the case described above that we feel that it merits all that is claimed for it. We hope that it will be tried by others and will gladly assist by giving whatever information we can. The tubes used in our experiments, designed and made by Mr. Brown, varied in capacity from 25 to 100 c.c., but can be made of any desired size by a competent glass-blower.

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WHEN AND HOW TO USE NITROGLYCERIN *

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There appear to be three general indications for the use of nitroglycerin in medicine, namely, to relieve distressing or dangerous symptoms due to local arteriosclerosis or arterial spasm; to lower the general blood-pressure when its continuance at the existing height threatens accidents to the cardiovascular apparatus, and to clear the diagnosis.

The power of nitroglycerin is perhaps best shown when it is used to free the circulation in vitally important regions of the body where the supplying arteries are unduly contracted. The two most important vital regions are the heart itself and the brain; and arterial disease in these regions is usually attended with high blood-pressure. Sclerosis of the coronary arteries, when the lesion is pronounced, may be attended by some or all of the following symptoms: soreness, oppression or pain in the precordium, especially behind the sternum; pain in the neck, shoulders and arms, particularly the inside of the left arm; attacks of tachycardia; attacks of dyspnea, which are often intense, and often attended with palpitation; and the symptoms of myocarditis. Precordial distress, which may be of all degrees from a slight sense of oppression to angina pectoris, and dyspnea, are the most common symptoms, and they, as well as the other symptoms, are apt to be brought on by slight or moderate exertion or excitement, and to come on after eating and in the night. Truly marvelous relief of these symptoms, in cases with high blood-pressure, often follows the administration of nitroglycerin, combined, it may be, with small doses of strychnin, and, if there is much myocardial insufficiency, with strophanthus also, and always with a suitable diet. I have seen patients who were rendered very miserable by such attacks of cardiac pain and dyspnea, occurring both during the day and at night, recover for considerable periods comfort and apparent cardiac balance when so treated.

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* Read before the Kings County Medical Society, June 17, 1913.

Part of the benefit derived from nitroglycerin in these cases of localized arteriosclerosis may be due to the lowering of the blood-pressure which it produces, and the consequent relief of the strain on the diseased arteries; and that is particularly probable in sclerosis of the aorta near the heart, which is often associated with coronary sclerosis, and which, by itself, especially if there is also dilatation of the diseased aorta, can give symptoms similar to those mentioned above. Aortic sclerosis is frequently associated with very high blood-pressure.

Cerebral arteriosclerosis can exist without giving subjective symptoms, and its first local manifestation may be apoplexy; but it may produce abnormal sensations of a vague character in particular regions of the brain, head noises, vertigo, especially when the head is placed in certain positions, and severe headaches. These symptoms are frequently relieved, and sometimes for long periods, by nitroglycerin, but only in cases in which the blood-pressure is high. Abnormal sensations in the head are frequently associated with low or relatively low blood-pressure; and in such cases nitroglycerin is contra-indicated.

Arteriosclerotic pains in the legs, occurring mostly at night, are particularly amenable to nitroglycerin. The pains due to splanchnic arteriosclerosis seem to be less so, though they may be relieved by it.

Nitroglycerin can be used to lower general high blood-pressure which threatens accidents to the cardiovascular apparatus; but it has not the superlative value in this class of cases that it has in those in which the symptoms are due to localized arteriosclerosis, or arterial spasm. Aconite and veratrum often serve better in these cases, especially if the myocardium is in fairly good condition. The quickest and most effective means of lowering the blood-pressure when it threatens injury to the cardiovascular apparatus is venesection; and the one which keeps the blood-pressure down for the longest periods is regulation of the diet.

The use of nitroglycerin for diagnostic purposes has been mentioned and described by me in former articles.[1]

This drug can be employed to show whether certain symptoms are due to contracted arteries or to some other cause. The symptoms which invite this test are chiefly pains and abnormal sensations in various parts of the body associated with elevation of blood-pressure. If the administration of nitroglycerin produces marked relief of these symptoms, they are probably due to arteriosclerosis or arterial spasm. It is my custom, if a patient with high blood-pressure complains of headache or other symptoms which might be due to localized arteriosclerosis, to put a hypodermic tablet of one one-hundredth of a grain of nitroglycerin under his tongue and watch results. In three or four minutes, if the headache or other symptom is due chiefly to arterial contraction, relief is experienced. If relief does not come, or if aggravation ensues, the cause is probably not arteriosclerosis; and in the case of a headache, it is apt to be toxemia or a neoplasm. In conditions of low blood-pressure this test is of no value.

The knowledge when to use nitroglycerin involves the knowledge when not to use it. The indications for its use have been suggested; what are the contra-indications?

Low blood-pressure is the main contra-indication. In general, it may be said that nitroglycerin should never be given when the patient's blood-pressure is lower than normal for his age and condition; that it should not be given, as a rule, in advanced nephritis with very high blood-pressure, or in toxemic conditions producing high blood-pressure; that it should not be given to modify the action of the so-called vaso-constrictor heart stimulants; that it should not be given to patients who have any idiosyncrasy in regard to its action, and that it should never be given for a heart stimulant.

The administration of nitroglycerin is attended with very few difficulties. It can be given by injection under the skin, by placing a soluble tablet under the tongue, which is almost as speedy a way of getting its effect, and by the stomach, which is the least reliable method. I usually give it under the tongue, if the patient is conscious.

The dosage of nitroglycerin varies ordinarily between one two-hundredth and one fiftieth of a grain. Its effect passes off in less than half an hour, so that the dose may have to be repeated often to produce a persistent effect; though it frequently happens that the relief from a single dose or a few doses endures long after the physiologic effect, as such, has ceased. I am accustomed to put into the hands of patients suffering from symptoms of sclerosis or spasm of the coronary arteries or arteries in the head or extremities, hypodermic tablets of one one-hundredth of a grain, with directions to put one under the tongue when the symptoms appear, and to repeat the dose if necessary. In some cases one or two repetitions may be required, seldom more, unless tolerance has been established, in which case the dose must be increased and continued longer. For the purpose of lowering the general blood-pressure the drug should be given every hour or half hour. As a general rule, I may say that nitroglycerin, in the absence of contra-indications, should be given in sufficient doses to produce the desired effect.

Although nitroglycerin appears to be a comparatively harmless drug, bad consequences can follow if it is taken too freely. I have seen patients who took it excessively develop cardiac weakness and irritability, localized edema, excessive sweating, and visual disorders. A woman 80 years old, who took nitroglycerin steadily for more than a year, by my direction, to relieve arteriosclerotic pains in the thighs, and who during that period gradually increased the dose from two or three tablets of one one-hundredth of a grain during the night to eighteen tablets during the night, developed edema in one foot, profuse perspiration and a visual disturbance characterized by the appearance of fine black specks in the field of vision. The perspiration and the black specks disappeared promptly after the drug was discontinued.

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[1] Cornwall, E. E.: Value of an Antiputrefactive Diet in Differential Diagnosis of Conditions Producing High Blood-Pressure, Arch. Diagnosis, July, 1912; Some Practical Points in Interpretation and Management of High Blood-Pressure, Med. Rec., New York, Nov. 16, 1912.

SUMMARY

In conclusion I wish to repeat and emphasize the following points:

1. The general indications for the use of nitroglycerin are (1) to relieve symptoms of localized arteriosclerosis or arterial spasm in vitally important regions of the body, and, when there is pain due to contracted or diseased arteries, in other regions; (2) to reduce general high blood-pressure in selected cases, if its continuance threatens accidents to the cardiovascular apparatus; and (3) to clear the diagnosis.
2. The chief contra-indications to the use of nitroglycerin are (1) low or relatively low blood-pressure; (2) advanced chronic nephritis with very high blood-pressure and toxemic conditions producing high blood-pressure, as a rule; and (3) the presence of an idiosyncrasy in regard to its action.
3. Nitroglycerin should never be used for the primary purpose of a heart stimulant.
4. Nitroglycerin given under the tongue produces almost as prompt an effect as when injected under the skin.
5. Nitroglycerin, if given too long or in too large doses, can produce injurious effects, which, however, usually pass away, at least apparently, when it is discontinued.

1218 Pacific Street.

POSITIVE RESULTS FOLLOWING THE INOCULATION OF THE RABBIT WITH PARETIC BRAIN SUBSTANCE

A PRELIMINARY NOTE

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AND

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WASHINGTON, D. C.

In a previous article in The Journal[1] we stated that we had been engaged for some time in the inoculation of rabbits with spinal fluid and brain substance from cases of paresis, but so far with negative results. Recently we have had an encouraging, though not conclusive finding, which we reported, May 8, 1913, at the annual meeting of the American Association of Bacteriologists and Pathologists, and which we desire to record in a preliminary note on account of the difficulties which seem to beset this line of work.

Our seventh attempt with brain substance was as follows:

The patient, W., aged 48 on admission, Nov. 2, 1911, had syphilis in 1899 and was treated for it; symptoms of paresis appeared in March, 1911. He was alcoholic; clinically and serologically, a typical paretic. He died Feb. 8, 1913; immediate necropsy was held; histologic examination was typical of paresis according to opinion kindly given by Drs. Meyer and Ferguson of Johns Hopkins Hospital. No spirochetes were found in the brain by Levaditi's method.

Inoculations of two rabbits were made within an hour of death. One rabbit has remained entirely negative. The second rabbit, 108, was injected in each testicle with 1 to 2 c.c. of an emulsion of brain substance from the right and left frontal areas. Weekly examinations were made and nothing was noted until March 31 (*fifty-one days*), when the left testicle seemed larger than usual, but with no definite nodule; a tapping was negative for spirochetes; the same finding and the same result on two following weeks; then the testicle became normal in size and we were about to discard the animal, April 28 (*seventy-nine days*), when it was noticed that both eyes showed a marked complete interstitial keratitis with injection of corneal margin; Wassermann reaction ++ (Captain Craig). The testicles were excised and no lesions or spirochetes were found. Both eyes were excised, and small pieces of the cornea and corneal emulsion were injected into two rabbits' testicles. The cornea showed a round-cell infiltration and a disintegration of lamellae identical with that found in proved syphilitic keratitis. No spirochetes were found in the cornea by dark-ground illumination or by Levaditi's method.

One rabbit has remained entirely negative. The second rabbit had a very small nodule in the testicle after thirteen days; no spirochetes were found. In twenty-eight days, examination of the fundus by Dr. Green and Captain Davis showed a definite disseminated chorioiditis of both eyes. Wassermann ++ (Captain Craig). On the thirty-second day the right eye was excised, the chorioid scraped off, ground up in salt solution and inoculated into the testicles of two rabbits. No spirochetes were found by dark-ground illumination or by Giemsa's stain. On the thirty-fifth day, the suspected testicle was excised and a small hard nodule was found which was typical in appearance and consistency, but no spirochetes were found. Transfers were made to two other animals.

In brief, the inoculation of the rabbit's testicle with typical paretic brain substance, in which no spirochetes were found, has resulted in a doubtful lesion of the testicle and the production of definite interstitial keratitis, identical with that which is known to be due to *Spirochaeta pallida* in experimental syphilis in the rabbit. On transfer of the cornea to a second rabbit, a definite lesion of the testicle has been followed by a typical chorioiditis. In neither rabbit have spirochetes been definitely demonstrated, but both animals have shown a strong Wassermann reaction with small amounts of serum which, in our hands, has never reacted positively in normal animals.

While we have not been able, as yet, to demonstrate *Spirochaeta pallida* in the lesions of these rabbits, we believe that the lesions are syphilitic and that in further transfers we shall be able to demonstrate their nature. Uhlenhuth and Mulzer[2] have called attention to the very small primary lesions which may occur in the testicle after inoculation of blood and other body fluids, and we believe that in these rabbits the testicular lesions were so minute that the organisms were not detected and that the virus has found a more favorable place to multiply in the eye. We have been particularly impressed with this view because the strain of *pallida* which we obtained from the spinal fluid in a case of nervous relapse has shown a marked affinity for the eye after testicular or intravenous injection. It regularly produces typical pannus and keratitis. Spirochetes have been found in these lesions by Levaditi's stain, but only after several attempts. Igersheimer[3] has emphasized the difficulty of finding spirochetes in lesions of the eye which have not been produced by direct inoculation, and we believe that several transfers may be necessary before the spirochetes will become sufficiently habituated to the rabbit to produce a clear-cut lesion of the testicle.

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[1] Nichols, Henry J., and Hough, William H.: Demonstration of *Spirochaeta Pallida* in the Cerebrospinal Fluid from a Patient with Nervous Relapse Following the Use of Salvarsan, The Journal A. M. A., Jan. 11, 1913, p. 108

[2] Uhlenhuth and Mulzer: Centralbl. f. Bakteriol., orig., 1912, p. 165.

[3] Igersheimer: München. med. Wchnschr., 1912, p. 2089.

The subject of paresis has taken on new interest since Noguchi's very important demonstration of *Spirochaeta pallida* in the brain substance of paretics. The organisms have been found in 24 per cent. of cases, although in some instances they are very scarce.[4] Our result tends to confirm this demonstration in so far as it relates to a living virus present in the brain substance. Our failure so far to find the spiral form of the organism may suggest the presence of some other form, such as granules, which are not recognized, but for the present we prefer the view that spirochetes are present, as such, but in too small numbers, as yet, to be readily found.

AN INTERESTING CASE OF HEMOPHILIA TREATED WITH REPEATED INJECTIONS OF BLOOD-SERUM

F. E. CLOUGH, M.D., LEAD, S. DAK.

Patient. M. F., girl, aged 14, presents negative family history relative to hemophilia. No history of hemophilia developed in this case until the patient reached the age of 11. At that time she had her tonsils and some adenoids removed. Following this operation there was profuse bleeding from the back of the pharynx that almost exsanguinated the patient. Five days later bleeding again occurred from the same location.

One year after this she started to menstruate, the first period lasting two weeks. The twenty-eight-day type was at once assumed, the flow lasting for ten or fifteen days. At first she was kept in bed, given ergot, stypticin, calcium chlorid, gelatin and various other drugs without in any way influencing the course of the disease.

Finally, she was given 30 c.c. of horse-serum with very favorable results. For the following three months the period lasted but three days each time. The next month she was sick for two weeks. Since that time she has had three injections of blood-serum obtained from her mother, each one being able to control the situation for three or four months. It is now four months since the last dose was given and her last period was prolonged for eighteen days. She will be given another injection this month.

Whether it will be necessary to continue these injections remains to be seen.

Homestake Hospital.

UNUSUAL CONCRETION REMOVED FROM NASAL CAVITY THROUGH THE MOUTH

ALBERT A. CRABBE, M.D., TRAER, IOWA

The patient, a woman, aged 55, had been taking chiropractic manipulations for "catarrh" accompanied by a very foul breath and discharge, also difficulty of breathing through the nose. She failed to receive any benefit from manipulation of muscles of back and neck, and I was asked to make an examination.

In an exploration of the posterior nasal cavity by means of a probe on which was a bit of cotton, an obstruction was met. By using a little force the obstruction was loosened and pushed into the mouth. After almost swallowing it the patient spit out what proved to be a concretion, the interior of which was composed of cotton, surrounded by a hard, concrete-like covering from ⅛ to ¼ inch in thickness, the mass measuring 1 by 1⅜ inches.

The patient then remembered having placed a bit of cotton in her nose six years ago. She had never seen it since but supposed it had come out while she slept. Her "catarrh" was promptly relieved after the removal of this foul-smelling chunk.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

DIPLOSAL.—Acidum Salicylo-Salicylicum:—Salicylsalicylate.—Diplosal is the salicylic ester of salicylic acid, $OH.C_6H_4COO.C_6H_4COOH$.

Diplosal is obtained from salicylic acid or salicylates by the action of suitable condensing agents.

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Manufactured by C. F. Boehringer and Soehne, Waldhof, Mannheim, Germany (Merck and Co., New York). U. S. patent No. 922,-995 (May 25, 1909; expires 1926). U. S. trademark No. 85,549.

Diplosal Tablets, 7½ grains.—Each tablet contains diplosal 0.5 Gm. (7½ grains).

No Quarter for the Medical Pretender.—Every type of quack should be dealt with by a medically controlled society in the most drastic manner. The practice of medicine in every one of its phases should be strictly limited to regularly licensed practitioners. The *Kansas State Journal* points out those to whom medical practice should be confined, and gives cogent reasons. It should be confined to that class of men whose members have made possible the digging of the Panama Canal, whose representatives are found on the battle-field attending the dying and wounded, who are found leading the fight against impure and adulterated drugs and foods and who are meeting the invasions of contagious and infectious diseases at every port and in every community. That such men should have to tolerate the presence, much less the competition, of the quack with his special cure for cancer, or the selfish charlatan who is in no sense whatever prepared to discharge the most elemental medical service to his fellow men, is a fact that smells to heaven and befouls the citizenship that permits it to obtain. —*Med. Times.*

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[4] Noguchi: München. med. Wchnschr., 1913, p. 737.

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THE BILE PIGMENTS AND THE LIVER

When bile pigments are introduced from without into the circulation they are excreted by the liver in the bile produced there. This observation, along with the fact that in ordinary conditions bile pigments are rarely found elsewhere than in bile itself or in the liver tissue, has served to establish the impression that the liver is the sole organ concerned with the manufacture as well as the excretion of these pigments. It is, further, well known that the introduction of free hemoglobin into the circulation causes an increased secretion of bile pigment. Any process or product which will promote the destruction of the erythrocytes in the circulation itself by a process of hemolysis will accomplish a similar result. The bile pigment resulting represents derivatives of the portion of the blood-pigment molecule which has lost its iron. In the destruction of red blood-corpuscles the hemoglobin is decomposed first into its protein and iron-containing chromogenic moieties; the latter then loses its iron and is converted into bile pigment. The iron remains in the liver and may probably be utilized again for purposes of new formation of corpuscles. In any event the amount of iron which can be demonstrated in the liver is enormously increased by any condition which augments the rate of blood destruction. These are some of the facts which have in the past become associated to establish the liver as the seat or origin of the bile-pigments.

Experimental studies conducted by the department of experimental pathology at the Johns Hopkins Medical School have brought evidence which may upset these current views regarding the necessity of the liver for the genesis of the bile pigments. The problem has been particularly emphasized by the cases of so-called hematogenous icterus in which there is no obvious obstruction to account for the appearance of bile pigment in the blood and urine. Whipple and Hooper have found,[1] in the first place, that when free hemoglobin is introduced into the circulation of animals in which the portal circulation has been "side-tracked" away from the liver by means of the Eck fistula, hematogenous jaundice is still possible. Normal and Eck-fistula dogs react in a similar manner toward infusion of hemoglobin; and the appearance of bile pigments in the urine is not delayed by shutting out the portal blood from the liver and cutting down its blood-supply to about one-quarter of the normal.

The formation of bile and bile pigments is much less in an Eck-fistula dog than in a normal animal, and consequently an induced icterus is much less intense. Whipple and Hooper believe that this is probably due to a lessened activity of the liver-cells because of decreased blood-supply; and they remark that the observation does not harmonize with the current view that bile pigments are formed solely from hemoglobin, because there is no evidence of more hemolysis in a normal than in an Eck-fistula dog. The Baltimore investigators make the added suggestion, in view of these facts, that the bile pigments may be formed in part, at least, from other substances than hemoglobin, and, further, that bile-pigment formation normally may depend on the functional activity of the liver-cells rather than on the amount of free hemoglobin supplied to them. More radical, however, is their contention[2] that, in dogs at least, hemoglobin can be rapidly changed into bile pigments in the circulating blood without participation of the liver. This is based on the fact of the speedy appearance of the pigments after introduction of free hemoglobin into circulation when the hepatic organ has been excluded from action. The pigment formation was actually observed to go on in animals whose liver, spleen and intestines had been shut out of the circulation and in those with merely a head and thorax circulation.

Whipple and Hooper admit that those who believe the liver is necessary for the formation of bile pigments may support the theory that the liver elaborates a ferment, present in the blood, which brings about the change of hemoglobin to bile pigment. Somehow the overworked enzyme hypotheses can always be brought into play when interpretation becomes difficult. Experiments with blood-serum, hemoglobin and various organ extracts *in vitro* have not borne out the enzyme theory; yet they cannot be said definitely to disprove it.

Precisely where the supposed new formation of bile pigment outside of the liver can take place is problematic. The bone-marrow may be one seat of the reaction. It is also possible that the endothelium of the blood-vessels is the agent which brings about the rapid change of hemoglobin to bile pigment. This mechanism perhaps comes into play when there has been a destruction of many red cells with much hemoglobin free in the plasma; for it is known that endothelium is able to engulf and digest erythrocytes, and in certain diseases the activity is striking. At any rate, the supreme dominance of the liver has now been seriously threatened.

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[1] Whipple, G. H., and Hooper, C. W.: Hematogenous and Obstructive Icterus: Experimental Studies by Means of the Eck Fistula, Jour. Exper. Med., 1913, xvii, 593.

[2] Whipple, G. H., and Hooper, C. W.: A Rapid Change of Hemoglobin to Bile Pigment in the Circulation Outside the Liver, Jour. Exper. Med., 1913, xvii, 612.

THE ADRENALS AND MUSCULAR EFFICIENCY

Ever since the intimate relation of Addison's disease to pathologic conditions of the adrenal glands has been recognized, attempts have been made to correlate its symptoms with the perverted physiologic functions. The muscular weakness of persons suffering from Addison's disease has long been noted; and inasmuch as there is an undoubted deficiency of adrenal secretion in this condition, it is natural to inquire to what extent muscular efficiency is associated with the product of the glandular activity. The problem, in other words, follows directly from the observed association of muscular fatigue and deficiency of adrenal secretion. Until proof of a causal relation between these two factors is forthcoming, however, their actual interrelation must remain a matter of conjecture.

In an experimental way some evidence has accumulated to indicate that removal of the adrenals has a debilitating effect on muscular power and that injection of extracts of the capsules has an invigorating effect. Inasmuch as it has of late been maintained that an increased secretion of the adrenal glands can be provoked as a reflex result of pain or major emotions and it is agreed that stimulation of the splanchnic nerves in general brings about this result, it seems quite possible that any of these mechanisms might serve to facilitate muscular performance. The product of the adrenal glands would thus serve as what has lately been called a "dynamogenic" factor.

Drs. Cannon and Nice[1] have attempted to unravel the relations of the adrenals to the muscular functions. There can be no question, from the evidence now available, that there is a marked improvement in muscular contraction after adrenal secretion is evoked or after epinephrin is injected. A large part of this increased efficiency is unquestionably due to the improved circulation. Indeed, the increased blood-flow attending the changes in blood-pressure probably account for the major part of the betterment of action of the fatigued muscle when epinephrin finds its way into the circulation. But beyond this there is a further slight augmentation of muscular efficiency which can scarcely be attributed solely to this feature. How to explain it is not easily decided. It may be, as the Harvard investigators suggest, that under the local influence of epinephrin there is a facilitation of the passage of impulses to the fatigued muscle. Fatigued muscles may thus be prepared by the secretion of the adrenal glands for better response to the demands of powerful nervous discharges. In any event, as Cannon and Nice duly point out, the actual changes wrought are too slight to account for the feats of strength which are performed in times of great excitement. Under such conditions the main source of power is presumably derived from an immensely augmented activity of the nervous system.

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[1] Cannon, W. B., and Nice, L. B.: The Effect of Adrenal Secretion on Muscular Fatigue, Am. Jour. Physiol., 1913, xxxii, 44.

THE REAL NUTRIENT ENEMA

There are so many indications for the use of a suitable method of nutrition that will permit the introduction of food into patients otherwise than by the mouth, that the comparative neglect of this field of study seems surprising. This apparent indifference to the needs of the practicing physician is the more conspicuous because the employment of nutrient enemas which was initiated to meet the needs here referred to dates back, in its modern aspects, to the investigations of von Leube in 1872. Considering the great advances made in practical medicine in the long period which has elapsed since then, and even since Ewald's work on the same problem in 1887, it can scarcely be said that the question of rectal alimentation has been furthered to any effective degree. This is not attributable, however, to the fact that the originally recommended procedures are thoroughly satisfactory or especially commendable, for they are far from being so. Scarcely any serious investigation of the efficiency of the current methods of rectal feeding has failed to point out the limitations or even the complete uselessness of the procedures in vogue from time to time.

We have commented on this subject before,[1] intimating what is actually accomplished by the rectal enema as now used, wherein its shortcomings lie, and how they are likely to be remedied. The earlier technic of injecting larger volumes of nutrient fluids at one time has been superseded by the drop method whereby the absorptive capacities of the lower bowel are not overburdened at any one moment and the removal of the contents can keep pace with their introduction. Stagnation of putrescible or fermentable mixtures in the intestine—one of the sources of irritation and admitted objections to a bulky rectal instillation—can now be avoided; although, indeed, the retention of a feeding-tube in the rectum for hours is not always cheerfully tolerated by the patient.

As a method of relieving thirst, the rectal injection serves a beneficent purpose. Further than this, however, the usefulness of any additional substance—fat, carbohydrate or protein—still demands rigorous proof. Inorganic salts, so-called mineral nutrients, can undoubtedly be absorbed from the lower bowel, a fact which can easily be demonstrated by the introduction of foreign salts or drugs and their subsequent detection in the urine. Iodids, for example, belong in this category. The concentration of the saline solution introduced is no longer neglected in the light of our modern knowledge of osmotic pressures and tissue irritability. The isotonic solution, whether of salt or of sugar, is quite as appropriate for the bowel as for the circulation, in the treatment of which the contributions of physical chemistry have been adopted in a practical way. In the appreciation of this factor real progress has been made. But such considerations are mere incidents to the broader and more significant question as to whether or not the true nutrients can actually be absorbed from the lower bowel and introduced in sufficient abundance to make the method worth while.

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[1] The Requirements of Rectal Feeding, editorial, The Journal A. M. A., Dec. 9, 1911, p. 1916; Rectal Feeding and Absorption from the Large Intestine, Current Comment, The Journal A. M. A., Sept. 21, 1912, p. 946.

As might be expected, the entirely new conception furnished and experimentally tested by alimentary physiology, concerning the absorption of foodstuffs, which ascribes the real nutritive virtues to the ultimate digestion fragments and makes egg albumin and plant albumin as foreign to the blood as a hostile invader, has affected the theory of the nutrient enema. We can understand now why the egg-and-milk enema gave such insignificant results; for the undigested pabulum was unsuitable for absorption by the digestively feeble or impotent portion of the alimentary tract to which it was offered.

The endeavors of many advocates to remedy an apparent defect in the technic of rectal alimentation by predigesting or "peptonizing" the mixtures used, by mixing them with pancreas rich in digestive enzymes, was a step in the right direction. It failed where incomplete digestion fails, namely, in not carrying the degradation of the proteins and other foodstuffs far enough to break down and dispose of the irritant proteoses and the like. Now, however, it is indisputably established that an individual can be sustained for long periods on the products of complete digestion: amino-acids, sugars, fatty acids and glycerol.[2] These are all simple compounds. They make no further demands on the digestive processes and are "ready" for physiologic uses. The obvious experiment of testing their availability by rectum as it has been demonstrated by mouth must be the next step in bringing the problem of the nutrient enema to a stage comparable with the new status of the physiology of alimentation.

Indications of a favorable outcome have already been published, the latest and in some respects the most progressive one being a study by Bywaters and Short[3] of the utility of amino-acids and sugars in rectal alimentation. These English physiologists have pointed out, as we have previously mentioned, the unreliability of the older statistics regarding the absorption of real foodstuffs from nutrient enemas. The daily urinary nitrogen output of patients receiving instillations of eggs or milk "peptonized" a few minutes fails to give evidence of anything more than traces of absorbed protein products. Evidently such brief predigestion is inadequate; the products must be converted beyond the "peptone" stage. On the other hand, amino-acids prepared from milk digested twenty-four hours with vigorous pancreatic enzymes were apparently well absorbed and did not undergo damaging preliminary putrefactive changes in the lower bowel. Dextrose, as might be expected, is absorbed better than lactose, and checks the losses due to inanition. Fat is poorly absorbed by rectum. Bywaters and Short suggest from their experience with patients suffering from gastric ulcer that useful enemas can be prepared by vigorous pancreatic predigestion of milk with subsequent addition of 5 per cent. of dextrose. The use of egg additions is contra-indicated because of the tendency to the formation of objectionable hydrogen sulphid.

This is a step in the right direction to which modern physiology points. The details can doubtless be improved and amplified in the light of modern biochemical knowledge. Perhaps the amino-acids themselves or mixtures thereof will soon be available at prices within the reach of practical as well as purely experimental demands.

THE "FATHER OF OVARIOTOMY" AND HIS HISTORIC PATIENT

In an interesting review of the life and career of Dr. Ephraim McDowell, the "father of ovariotomy," Dr. August Schachner[1] of Louisville has uttered a protest against the indifference which has been manifested in respect to Jane Todd Crawford, that brave woman "who successfully balanced her heroism against McDowell's genius and thereby joined with McDowell in emancipating countless millions of human beings of all nations and creeds in time to come from a terrible condition from which a miserable death alone supplied the avenue of escape."

In the opinion of his latest biographer, McDowell's deserts have been overlooked to an unpardonable degree. When one considers the conditions which prevailed in the practice of medicine and surgery in the United States in 1809, the year of McDowell's first operation on Mrs. Crawford, after she had traveled sixty miles on horseback to Danville, where the pioneer surgeon lived, and when one recalls what laparotomies must have meant to patient and surgeon alike in the days before anesthesia and antisepsis, when precedents and experiments were out of the question, it is perhaps no unjustifiable demand to ask that the pioneer patient should share with Dr. McDowell the honor and glory of some broader recognition for her heroism.

Dr. Schachner is inclined to question, or at least to regard as exaggerated, the tradition that McDowell's life was threatened by an angry mob for his rashness in performing the operation. There seems to be no doubt, however, that several attempts were made to dissuade him from operating. The account of his early successes waited for many years until it found a broader publication in this country in 1817. Recognition has proverbially been slow to come to those who have blazed new trails in the unexplored forests of science. The importance of McDowell's operations lies not alone in the important success which he secured; by demonstrating to the world the possibility and safety of entering the abdominal cavity his work became "the cornerstone of abdominal surgery." Abdominal surgery, Dr. Schachner remarks, has reached such proportions that ovariotomy is but one of its smaller divisions, and when we think that even this bids fair to be extended and still further improved, we begin to realize the priceless gift and the enduring obligation that humanity owes to Ephraim McDowell and Jane Todd Crawford. It is fitting that the present generation of men of medicine should become better acquainted with those who paved the way for the success of the modern era. When the history of medicine in the United States becomes better known and appreciated, the students of to-day will learn that they have fellow countrymen to whom Americans and Europeans alike are delighted to render the honor that is due.

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[2] Compare A Striking Experiment in Nutrition, editorial, The Journal A. M. A., May 10, 1913, p. 1464.

[3] Bywaters, H. W., and Short, A. R.: Aminosäuren und Zucker bei der Rektalernährung, Arch. f. exper. Path. u. Pharmakol., 1913, lxxi, 426.

[1] Schachner, A.: Dr. Ephraim McDowell, "Father of Ovariotomy": His Life and His Work, Bull. Johns Hopkins Hosp., 1913, xxiv, 153.

THE SMOKE PROBLEM

Time was when a municipal smoke inspector reported, "I certify that I have inspected the smoke of this city for the thirty days past. I find plenty of smoke and apparently of good quality. Respectfully submitted." Though much remains to be done with respect to smoke prevention, it is probable that such a report would not "go" in any American city to-day. The magnitude of the difficulties in combating this wide-spread evil, discomforting in so many ways and often so injurious to health, are not generally comprehended. The metropolitan health commissioner states that "perhaps no other cause of complaint gives rise to more dissatisfaction with the health department"[1]; yet its efforts to abate the nuisance have been unremitting. The department can usually do no more than establish the facts of a violation and ask the courts to convict. Though this procedure is usually effective in the case of small concerns, it is not of much avail with the great and powerful corporations which are often among the worst offenders.

Nothing is ever settled that is not settled right. Of course almost no city would to-day endure the excessive belching of smoke and cinders common within its limits a decade ago, and yet none can be satisfied with the present state of things. A professor in Leeds University has found that the smoke cloud cuts off 40 per cent. of that city's sunlight; this is a decrease of sunlight which must result in ill health and which, with the deposit of soot on vegetation, makes for the destruction of many varieties of plant life. Within the city of London 76,000 tons of soot are said to be deposited annually. In Chicago over 200,000 tons of soot and cinders are said to be thrown annually out of locomotive stacks and spread over territory adjacent to the railways. (In New York electric power for almost all trains entering the city now obviates this untoward factor). Benner[2] considers the relation of smoke to human health: Does the inhaled soot predispose to tuberculosis? Pittsburgh is said not to have so much tuberculosis as other cities similarly located in which there is much less smoke; furthermore there is said to be more tuberculosis in the better residence portions of Pittsburgh (where there is less smoke and dirt) than in the more congested districts, where smoke abounds. On the contrary, "catarrh," pneumonia and other "bad air" diseases (and no doubt also anthracosis and pulmonary fibrosis) are prevalent, by reason of the irritating, carbon-laden atmosphere. The Pittsburgh ophthalmologists are said to be busiest after a heavy fog accompanied by smoke. The citizen is entitled to consider also the detriment to comfort, the saturating of houses with cinders and soot, the increased expense for laundering, cleaning and illumination, the depreciation of property and the destruction of merchandise as a result of the smoke nuisance, not to speak of the creation of Turner skies, which may be appreciated by the artist, but hardly by the begrimed man on the street.

One vital reason for hope of abatement of the smoke nuisance is the stupid and flagrant wastefulness which it is known to involve. Incomplete combustion means great loss of fuel and of the heat production for which furnaces exist. The unburned gases which usually accompany smoke may represent 20 per cent. of the calorific value of the fuel used. To the modern engineer the smoking factory chimney is "almost a badge of shame; for it means insufficiency in fuel consumption, half-burnt coal and dividends that should be distributed among stockholders, but are allowed to drift off into the atmosphere. A few years hence the owner of a smoking factory chimney will be classed with the spendthrift who lights cigars with ten-dollar bills."[3] A great deal of investigation has been made in the last decade, the result being manifest in: (1) improved design of furnaces and mechanical equipment; (2) a growing realization that the proper firing of fuel requires intelligent supervision, and that conditions in the fire-rooms should be such as to attract and keep efficient stokers; (3) an increasing public sentiment in favor of smoke abatement and smoke prevention, and (4) organized efforts to bring about the enactment and enforcement of statutes to control the emission of smoke. We shall not here consider the legal and the technical aspects of smoke prevention; these are taken up in the articles to which we have referred, and by Mr. Randall in a paper[4] which includes a valuable bibliography on the subject.

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[1] The Smoke Problem in New York, Month. Bull. Dept. of Health, City of New York, April, 1913.

[2] Benner, R. C.: Research in the Smoke Problem, Science, June 28, 1912.

[3] Flagg, S. B.: The Dividends that Float up the Chimney, Scient. Am., June 15, 1912.

[4] Randall, D. T.: The Smoke Problem at Boiler Plants, Bull. 39, Bureau of Mines, Dept. Interior, Washington, D. C.

Current Comment

ABSORPTION FROM THE PLEURAL CAVITY

The mechanism of absorption from the pleural cavity is a matter of considerable moment in relation to pathologic accumulations of fluid which may occur there and particularly with reference to the management of the situation after certain operative procedures in the thorax. Whether and how drainage shall be instituted depends, for example, in part on the way in which the absorption from the cavity is ordinarily accomplished. Both blood- and lymph-channels are available to carry off accumulated fluids; and in so far as the blood-system is concerned there are vessels in the limiting walls of the cavity as well as in the lungs itself which may contribute to the work of absorption and transport. In the case of both the pleural and peritoneal spaces it is now generally admitted that the blood-vessels may play quite as active a rôle as do the lymphatics, and that the intermediary intervention of the latter is not necessary for the removal of fluids from these large tissue spaces. By way of comparison, the capacity for absorption from the peritoneal cavity appears to exceed that from the pleural cavity. Whether in the case of the thorax the lung itself plays any active rôle has not been so clear. There has been evidence to indicate that the presence and respiratory movements of the lungs are efficient aids in the work of absorption from the pleural cavities. Recent experiments of Dr. Naegeli in Sauerbruch's surgical clinic at Zurich[1] demonstrate that the part taken by the lungs is *not a merely* passive or mechanical one. If the elastic movements of the lungs are kept up while the blood-vessels connected with them are ligated; the progress of absorption is greatly delayed and diminished. Similarly when the lungs are jacketed with an impermeable covering, the vessels of the exposed costal pleura fail to exhibit anything approaching the usual power of absorption from the space which they surround. Under such conditions the pulmonary blood-vessels are artificially prevented from participating; and further experiments indicate that any interference, even of slight degree, with the circulation in the lungs tends to inhibit the processes of absorption from the pleural cavities. The importance of perfect circulatory conditions in the lungs, when fluid is to be drained from the spaces about them, can thus easily be appreciated.

THE TOXICITY OF METHYL AND ETHYL ALCOHOL

The close chemical relationship and the similarity in physical properties and behavior of methyl and ethyl alcohol, the two chemical compounds which form the essential ingredients of wood alcohol and grain spirits, respectively, have made it difficult to believe that they could be so distinct and unlike in respect to their toxicity. For this reason we find the question recurring again and again as to whether the undoubted noxious character of wood alcohol is not, after all, associated with some by-product or impurity, rather than the methyl alcohol itself. It is not so long since precisely the same hypothesis was postulated for ethyl alcohol and whisky, and it was maintained that pure alcohol is far less harmful than the cruder distillates that are sold for human consumption. A growing collection of evidence is making it manifest, however, that we cannot neglect the fundamental toxicity of the alcohols themselves which form the chief and physiologically most significant ingredient of the fluids in which they enter into commerce. Langgaard[1] of Berlin has contributed new demonstrations of certain significant facts in relation to the two alcohols, to the probability of which our earlier comments[2] have already pointed. In small, frequently repeated doses methyl alcohol is far more poisonous than is ethyl alcohol. A single large dose of the latter may, however, provoke a more toxic manifestation than does methyl alcohol. It would appear as if methyl alcohol, administered in small repeated quantities, brings about a cumulative effect. In explanation it has been suggested that the alcohol tends to be retained in parts of the central nervous system, there to be slowly oxidized to formic acid. All drugs with cumulative manifestations should be the objects of unusual solicitude in respect to the hidden dangers which they harbor.

PROGRESS

In Cynthiana, Ky., is published a country paper, the *Log Cabin*. Recently, a traveling medicine faker, who called himself "Chief White Eagle," but whose real name was much less romantic—A. P. McCarthy—was indicted by the grand jury at Cynthiana for the illegal practice of medicine. In commenting on the case, the editor of the *Log Cabin* wrote:

> To some it will doubtless seem a hardship to stop McCarthy. His medicine may be all right. But we are of the opinion that it is contrary to the public good to allow strangers without medical diplomas to sell medicine to persons who do not and cannot know what they need and who know nothing of the medicines they buy. It is very necessary that persons who are sick shall have only such medicines as will help their ailments. If you are sick get a doctor; if not don't take medicine you know nothing about. Although the medicines may be helpful in some cases, they might be harmful to you.

A plain unvarnished statement calculated not to eulogize the medical profession but to define clearly a matter that concerns the public health. With editors of this type in charge of the rural press, the country has cause to feel optimistic of its destiny.

SEGREGATION AGAIN A FAILURE

San Francisco has been one of the prominent cities in which an attempt has been made at segregation of vice. This plan has apparently failed. A feature was the municipal clinic—an attempt at thorough and rigid inspection and quarantine of the women; but the clinic has now been abolished, we are informed, as the first step toward the solution of this social and municipal problem. The San Francisco *Call* remarks: "Established as the clinic was in a mistaken idea that it would result in an improvement of general conditions, San Francisco has found, as every other city has done that has tried the plan, that no form of attempted regulation of the social evil is socially beneficial or even tolerable." The Philadelphia vice commission report also declares segregation a failure. The opinion of many disinterested investigators seems to be that the very existence of commercialized vice, with all that it implies of personal and political corruption and degradation, is dependent on the existence of a segregated district. To what extent private sexual immorality can be effectively combated by legal means may be a matter of difference of opinion; the Philadelphia vice commission does not believe that such vice can be exterminated thus, but declares that commercialized vice can be put out of business and practically stopped by an efficient police administration in twenty-four hours, and that without scattering it all over the city. This is a hopeful element in a most perplexing problem.

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[1] Naegeli, Th.: Ueber die Resorption von Flüssigkeiten aus der Pleurahöhle, Ztschr. f. exper. Med., 1913, i, 164.

[1] Langgaard, A.: Die Giftigkeit des Methyl- und Aethyl-Alkohols, Ztschr. f. exper. Path. u. Therap., 1913, xiii, 20.

[2] Methyl Alcohol as a Poison, editorial, The Journal A. M. A., Nov. 30, 1912, p. 1974.

DR. EDWARD EVERETT HYDE

The sudden death of Dr. Edward Everett Hyde, Assistant to the Editor, note of which appears in another column, has come as a shock to THE JOURNAL staff and the entire force at the Association headquarters. His unassuming devotion to duty, his unfailing kindliness, his absolute fairness—his quiet yet forceful personality—had won the affectionate esteem of all his associates. THE JOURNAL has lost a faithful and devoted servant.

Medical News

FLORIDA

New State Board Laboratory.—The State Board of Health has decided to erect a two-story laboratory building in Pensacola, similar to that already erected at Tampa, to cost about $20,000.

Personal.—Dr. Fred J. Walter, Daytona, has sailed for Europe.——Drs. C. W. D'Alemberte, Pensacola, C. W. Bartlett, *Tampa, and Joseph Y. Porter, Jr., Key West, have* been appointed assistants to the state health officer.

Hospital Site Presented.—Eduardo H. Gato has donated a large plot of land on Division Street, Key West, improved by a building now being used as a hospital to the Cuban Society, the members of which have been administering the affairs of the Mercedes Hospital.

GEORGIA

Physicians Favor Inebriate Hospital.—The proposition of Representative Rickett to establish a state hospital for inebriates is meeting with much support from the medical profession of the state.

Personal.—Dr. J. W. Palmer, Ailey, has been elected president of the regular Board of Medical Examiners of the State of Georgia.——Dr. Frank C. Folks, Waycross, was seriously injured by a fall from his back porch, June 24.——Dr. Jesse C. Asbury, Greensboro, who has been ill with meningitis is reported to be improving.——Dr. George H. Noble, Atlanta, was operated on for appendicitis, June 14, and is reported to be doing well.

ILLINOIS

New Officers.—Lake County Medical Society at Libertyville, June 26: president, Dr. W. S. Bellows; secretary, Dr. W. C. Bouton, both of Waukegan.

Training School Graduation.—The Peoria State Hospital Training School for Nurses held its annual graduating exercises June 27. Dr. Frank P. Norbury, Springfield, delivered the annual address and Dr. George A. Zeller, superintendent of the hospital, presented the diplomas.

Personal.—Dr. E. L. Hill, Percy, has been appointed physician to the Southern Illinois Penitentiary, Chester.——Dr. Charles E. Hagar, Joliet, fell on the porch of his residence, cutting a deep wound in his ankle.——Dr. J. W. DuComb has been elected mayor of Beckemeyer.——Dr. Ralph A. Goodner, Nashville, has been appointed superintendent of the Anna State Hospital, vice Dr. W. L. Athon, resigned.——Dr. Harry C. Blankmeyer, Springfield, has been elected surgeon of the United Spanish War Veterans in Illinois.——Dr. W. C. Bridge, Elgin, *is reported to be seriously ill at St. Joseph's Hospital.*——Dr. George W. Boot, Evanston, is reported to be ill with scarlet fever.——Dr. O. P. Harris, Mendota, was operated *on* for the removal of gall-stones, June 22.

Chicago

Off for Europe.—Drs. Norval H. Pierce, Cornelius A. Leenheer, and Dr. and Mrs. George H. Simmons have sailed for Europe.

Order Hospitals Closed.—The building commissioner is said to have directed the closure of two hospitals on account of insufficient stairways and exits.

New Officers.—Chicago Medical Society, installation June 25: president, Dr. C. P. Caldwell; president-elect, Dr. James A. Clark; secretary, Dr. Charles H. Parkes.

Free Antityphoid Inoculation.—The Health Department announces that antityphoid inoculation will be administered free at the Iroquois Memorial Hospital, 23 North Market Street.

Sanitarium for Babies Open.—The Lincoln Park Sanitarium for sick babies at the foot of Fullerton Avenue, supported by the Daily News Fresh Air Fund, opened for its twenty-eighth season June 30. During the last season 14,035 sick babies were cared for. A new sanitarium building is to be erected on Picnic Island about one-quarter of a mile east of the present location.

Criticize County Hospital Laboratory.—In a report in the daily press on the condition of Cook County Hospital, signed by Drs. Ludvig Hektoen, E. Wyllys Andrews, E. R. LeCount, James W. Jobling, H. Gideon Wells, F. Robert Zeit, Maximilian Herzog and Frank H. Ames, the following paragraphs appear:

> "The committee regards the present laboratory equipment as a disgrace to the county and the laboratory force too small numerically to accomplish more than a fraction of the work which is required to be done daily. The morgue is a tumble-down building located behind the smoke-stack, and the laboratory is under the seats of the amphitheater. The plumbing is old and defective.
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> "Without incumbering this report with details observed by the committee, the equipment may be described as antiquated, broken and defective."

Personal.—Dr. Charles A. Costello is convalescent after an illness of about four weeks.——Dr. George H. Miller, who has been ill with scarlet fever, is convalescent.——Dr. Walter R. Titzell fractured a finger of his right hand by falling on a slippery sidewalk, recently.——Dr. John J. Gill sustained painful injuries to the right thumb and forearm while cranking his automobile, June 22.——Dr. Bertha Van Hoosen had conferred on her the honorary degree of Master of Arts by the University of Michigan, June 26.——Dr. Eliza R. Morse was knocked down by an automobile, June 25, and sustained severe injuries.——Dr. and Mrs. Samuel Metcoff had a narrow escape from death by gas asphyxiation, June 10.——Dr. and Mrs. J. A. Robison and Dr. Willard W. Dicker have returned from Europe.——Dr. Albert M. Wickstrom, who recently underwent an operation for appendicitis at the Henrotin Memorial Hospital, started for Europe on June 29, accompanied by his wife. Dr. Emma M. Wickstrom.——Drs. J. Z. Bergeron and Joseph C. Beck are reported to have resigned from the chair of diseases of the eye, ear, nose and throat at Bennett Medical College.

IOWA

New Officers.—Des Moines Medical Association, forty-seventh annual meeting, at Ottumwa: president, Dr. F. M. Fuller, Keokuk; secretary-treasurer, Dr. F. W. Bowles, Ottumwa.——Waterloo Medical Society, June 18: president, Dr. J. R. Allen; secretary, Dr. C. A. Waterbury.

Personal.—Dr. D. H. Killingsworth, proprietor of the Clarinda Hospital has begun the construction of a four-story brick addition which will accommodate about thirty patients.——Dr. Charles F. Applegate has been reappointed, for a fourth term, superintendent of the Mount Pleasant State Hospital.

Tuberculosis Notes.—Through the associated charities of Waterloo, a tent colony for the care and treatment of tuberculosis has been established on ground recently purchased by Blackhawk County on Wamly Street.——The Polk County Board of Supervisors has appropriated $12,000 for the care of twenty tuberculosis patients at Ridge Camp for the year.

Testimonial to Dr. Pearson.—A testimonial dinner was given to Dean William Wilson Pearson by his colleagues of the Medical Faculty of Drake University, Des Moines, June 2. Dr. A. C. Page acted as toastmaster. Dr. Frank E. Healey spoke on "Dr. Pearson, the Student," Dr. Paul E. Lineback on "Dr. Pearson, the Teacher," Dr. Walter L. Bierring on "Dr. Pearson, the Dean," Dr. Oliver J. Fay on "Dr. Pearson, the Man," Dr. H. A. Minassian on "Dr. Pearson, the Physician" and Dr. James Taggart Priestley on "Dr. Pearson, the Friend." At the close of Dr. Priestley's remarks he presented Dr. Pearson with a loving-cup as an expression of the high regard in which he is held by his colleagues. The dinner was attended by forty-one physicians.

MARYLAND

Baltimore

Off for Europe.—Drs. William H. Welch, Harry Adler, Charles H. A. Meyer and Walton Bolgiano have sailed for Europe.

Eugenic Wedding.—The first eugenic wedding in Baltimore took place at St. Paul's Church, June 25. Physicians' certificates of good health were presented by the contracting parties to the officiating clergyman in correspondence to the resolutions adopted at the recent diocesan convention. For several years, the subject of eugenics has received much attention from the Medical and Chirurgical Faculty, Dr. Lewellys F. Barker being the leader in the agitation regarding the passage of a law to require a certificate of health from all persons desiring to contract marriage.

MICHIGAN

Dinner to Retiring Health Officer.—Dr. Guy L. Kiefer, who recently resigned as commissioner of health of Detroit, after twelve years' service, was the guest of honor at a dinner tendered him by the employees of the Board of Health, June 30.

Hospital News.—Articles of association have been filed by the Manufacturers' Mutual Hospital Association, Detroit, to establish a hospital in the eastern part of the city to take care of employees in the Jefferson Avenue manufacturing district.——Work is progressing rapidly on the new tuberculosis sanatorium and detention hospital which is being built for Kalamazoo at an expense of $25,000.——The fund of $25.000 for the Children's Free Hospital, Detroit, was completed, June 4.——Dr. and Mrs. Eben Pennock have arranged to give $20,000 to the city of Hastings for a memorial hospital, one-half being due after the death of each donor. Mrs. Pennock is now 90 years of age and Mr. Pennock 89.——Plans are being prepared for the new Union Benevolent Association Hospital, Grand Rapids. The building will be five stories in height, of steel and brick construction and will have accommodation for nearly two hundred patients.——St. Mary's Hospital, Detroit, has declined to accept the $200,000 appropriated for additional city hospital facilities by the Board of Poor Commissioners of that city.

MINNESOTA

Hospital Dedicated.—The New Loretto Hospital, New Ulm, was dedicated with impressive ceremonies by Archbishop Ireland, June 15.

Free Typhoid Immunization.—The State Board of Health Laboratories have completed arrangements whereby they are prepared to furnish antityphoid inoculation gratis to all physicians and public health officers who apply.

Summer Medical Term.—The Medical Department of the University of Minnesota announces a summer medical term of six weeks to begin July 2. It will be open to graduates holding the degree of Doctor of Medicine in any recognized university or college and to undergraduates in medicine who have taken one or two full years in the University of Minnesota or any other recognized university or college. At the close of the session, special trips are to be arranged to the various state institutions.

Personal.—Dr. William J. Mayo, Rochester, has been elected a corresponding member of the Academy of Medicine, Paris.——Dr. George F. Freeman has been appointed superintendent of the State Hospital for Inebriates, Willmar, vice Dr. H. A. Tomlinson, deceased. Dr. R. E. Henning has been appointed assistant superintendent of the institution, vice Dr. Freeman, promoted.——Dr. A. J. Cox, Tyler, has been awarded $10,000 damages in his suit for $30,000 for false arrest against Marcus Lauritsen, Tyler.——Dr. J. A. DuBois, Sauk Center, has been appointed a member of the State Public Education Commission.——Dr. E. P. Ryan, Stillwater, was seriously injured by being run down by an automobile in Stillwater, July 5.

Sanatorium Notes.—Nopeming Sanatorium, the county institution for St. Louis County, has been inspected by the State Tuberculosis Commission and in correspondence with the law, St. Louis County is to be reimbursed $500 for every bed in the hospital. The money thus received is to be used for the erection of new buildings and the addition of equipment to the present institution. This will increase the capacity of the sanatorium to seventy-five.——The summer camp of the St. Paul Antituberculosis Society at White Bear Lake, known as the Eva Shapira Camp, was opened June 15, with a capacity of twenty-five.——Under the act of the legislature which authorizes state aid for county tuberculosis sanatoriums, Ramsey County expects to receive an appropriation of $100,000 for this purpose. The site of the institution and the plans for the buildings have been prepared and it is expected that work will begin at once.

MISSISSIPPI

State Board Meeting.—At the meeting of the State Board of Health, June 3, the office of president was declared vacant and Dr. Morris J. Alexander, Tunica, was elected president.

County Health Officers' Agreement.—The State Board of Health at its June meeting decided to require all county health officers to sign a form of agreement, binding themselves to observe the duties of the position; to enforce the rules and regulations of the State Board of Health; promptly to answer all correspondence relative to health matters; to supervise the work of the bureau of vital statistics; to make a monthly report to the secretary of the State Board of Health, the district member of the Board of Health and the persident of the board of supervisors; to attend the annual meeting of health officers, and to agree to visit at least once a year each school in the county.

Personal.—Dr. Benjamin J. Wilson, Emporia, has been elected surgeon to the Agricultural and Mechanical College, vice Dr. H. B. Noel.——Dr. R. D. Sessions has succeeded the late Dr. J. C. French as health officer of Natchez.——Dr. B. R. Martin, surgeon-in-charge of the State Charity Hospital, Vicksburg, has announced the following assistants: Drs. B. C. Garrette, Grove Hill, Ala.; W. A. Jones, Sweatman; I. P. Carr, Pontotoc, and J. H. Lynn, Chicago. Dr. John De Velling has been appointed assistant superintendent and bacteriologist of the hospital, vice Dr. C. R. Stingerly, appointed bacteriologist to the State Board of Health in place of Dr. S. R. Humphries, resigned.

NEBRASKA

State Laboratory Located.—It is announced that the bacteriologic laboratory of the State Board of Health will be located in the State Capitol Building, rather than at the University.

Hospital Sold.—The United Brethren Hospital, South Beatrice, has been sold to the German Lutheran Church of that place, the new owners taking possession October 1. Dr. H. M. Hepperlen will remain in charge of the institution.

Personal.—Dr. William H. Kerr, Falls City, who suffered a cerebral hemorrhage June 18, and was taken to the Mercy Hospital, Omaha, is reported to be making favorable progress.——Dr. C. T. Burchard, Falls City, has been appointed a member of the State Board of Health, vice Dr. C. P. Fall, Beatrice, retired.——Dr. Rea Buchanan has been appointed city physician of Lincoln.——Dr. A. Johnson, superintendent of the Norfolk State Hospital for the Insane, has left for his future home in Omaha. Dr. William D. Guttery, Pilger, first assistant physician of the institution, will be temporarily in charge.

NEW JERSEY

New Building for Tuberculosis Preventorium.—It is planned to build a new building in connection with the Children's Tuberculosis Preventorium. Jacob H. Schiff has offered $1,000 to the fund on condition that other contributors complete the balance of the $10,000 needed for the new building.

NEW YORK

Off for Europe.—Dr. S. E. Getty, Yonkers; Dr. and Mrs. Fred J. Cox, Albany, and Dr. and Mrs. F. C. Reed, Schenectady, have sailed for Europe.

Dr. Porter Retained in Office.—Dr. Eugene H. Porter, whose term of office as State Commissioner of Health expired December 31 last, is to continue in office until the end of Governor Sulzer's term, December 31, 1914.

The Bender Laboratory.—The Bender Hygienic Laboratory, Albany, celebrated its eighteenth anniversary by a dinner at the Country Club, June 25. Dr. Abraham Jacobi spoke of the advancement which the laboratory had made since he delivered the dedicatory address eighteen years ago; George E. Gorham, secretary of the corporation, read extracts from the records concerning the beginnings of the institution, and each of the five directors of the laboratory told of the work accomplished during his regime.

Mortality According to Marital Condition. — The State Health Department has been collecting statistics regarding the mortality rates as connected with the marital condition during the past three years outside of Buffalo and New York City. The most obvious fact indicated by these statistics is that the death rate for husbands is much lower than for single men at each age group except the highest, where it is about the same. The percentage of difference is the greatest at the ages 30-39 and 40-49, where the death rate of husbands is somewhat less than one-half that of bachelors. The table shows that the death rate of widowers and divorced men is considerably higher than that of husbands of the same age, and between 30 and 80 years not far different from the death rate of bachelors of the same age. The table shows further that the death rate of wives is lower than that of single women of the same age, the only exception being between the ages of 20 and 29, which is perhaps in part due to the influence of child bearing at those years and in part to the greater average age of wives in that group. The mortality of widows and divorced women is as a rule higher than that of spinsters. From the standpoint of mortality marriage is of less benefit to women than to men.

New York City

Chief of Hospital Resigns.—Dr. Joseph K. Blake, for five years surgeon of the Presbyterian Hospital and for twenty-five years a member of the teaching force of the College of Physicians and Surgeons has resigned both positions, to take effect July 1.

Hospital Changes Name.—The Board of Managers of the J. Hood Wright Memorial Hospital, which was originally known as the Manhattan Dispensary and Hospital, has obtained an order from the Supreme Court permitting them to change the name of the institution to the Knickerbocker Hospital.

Decreased Infant Mortality in the State.—There were during May 826 deaths of infants under 1 year of age which is a decrease of 133 from May, 1912. This is taken as a hopeful indication that the efforts to reduce the number of deaths of infants in the state outside of New York City is beginning to show results.

Personal.—Dr. and Mrs. Fred H. Albee, Dr. and Mrs. R. A. Benson, Dr. C. W. Cutler and Dr. Margaret S. Halleck have sailed for Europe.——Dr. J. A. Leighton, his wife and four children, met with a serious automobile accident on July 4 near Hackensack, all the occupants of the car receiving injuries though it is believed that none will prove fatal.

Infant Mortality.—For the week ended June 28 there were only 98 deaths among infants under 1 year of age in Manhattan, compared with 124 for the corresponding week of last year. In Greater New York there were 193 deaths or 29 less than during the corresponding week of 1912. The efforts of the Babies' Welfare Association are being directed mainly to teaching the mothers the advantages of breast feeding.

Floating Hospital Begins Work.—The *Helen C. Juillard*, the floating hospital of St. John's Guild, is now making daily trips to the new Seaside Hospital at New Dorp, S. I., where children needing prolonged care are taken ashore, while those going only for a short outing are returned to their homes in the evening. Last summer 55,617 women, children and babies were taken on day trips and 3,239 patients were treated at the hospital.

Life Table for New York City.—For the first time in its history the Department of Health has prepared a life table. A previous life table was prepared by Dr. John S. Billings under the direction of the Federal Census Bureau based on statistics for the triennium 1879 to 1881, while the present table is based on the statistics of the years 1909 to 1911. The table shows the life expectancy of males and females at certain ages. The table also shows that the duration of life for a child between 5 and 10 years of age was forty-one years longer thirty years ago, while it is now five years longer than at that time. There has been an increase in the expectancy of life at all ages under 40 years, while at all ages after 40 years, in both males and females, there has been a decreased expectancy varying from six months at 40 years to three years and three months at 85 years. The expectation of life is greater among females than among males up to 40 years of age; above 40 the reverse is true. It is pointed out that the lesson to be drawn from the figures is that the adult of the present generation is traveling at a pace too fast for his health, and that there is greater need from the standpoint of health for the practice of moderation in all things by the inhabitants of our cities.

NORTH CAROLINA

Personal.—Dr. C. Adrien Julien, Thomasville, for twenty years past physician in chief to the Baptist State Orphanage, has resigned and Dr. J. E. Hobgood, Caroleen, has been elected as his successor.——Dr. W. S. Ramkin, Raleigh, secretary of the State Board of Health, has gone to the Canal Zone for a two weeks' trip.

Hospital Notes.—Meriwether Hospital, Asheville, formerly the private surgical hospital of the late Dr. Frank T. Meriwether, will hereafter care for the general public and will extend its privileges to all regular practitioners of Asheville and Cuncombe County.——Work on the foundation of the Anson Sanitarium, Wadesboro, has been commenced. The building is to be of brick, three stories in height, and will cost $26,000.

OHIO

Leper in Cleveland.—Staff physicians of the City Hospital have decided that Dahaid Hfian, the Syrian leprosy suspect, is suffering from that disease. He is being held in quarantine at the hospital.

New Officers.—Tri-County (Seneca, Wood and Hancock) Medical Association, Findley, June 26: president, Dr. Robert Lee, Republic; secretary, Dr. E. H. Porter, Tiffin. The principal address was made by Dr. Frank Winders, Columbus, on heart disease.

Personal.—Dr. W. T. Miller, Cleveland, has been appointed a member of the State Board of Health.——Dr. H. H. Herman, Dayton, has been appointed a trustee of Miami University.——Dr. G. W. Baughman, Mansfield, fractured his left arm while cranking his automobile, June 22.

Antituberculosis Society Election.—At the annual meeting of the Ohio Society for the Prevention of Tuberculosis in Columbus, June 24, Dr. Samuel Iglauer, Cincinnati, was elected president, Dr. C. F. Tenney, Toledo, first vice-president, and Drs. E. V. Hug, Lorain, H. E. Welch, Youngstown, James B. Poling, Lima, and C. F. Tenney, Toledo, directors.

Cincinnati

The Academy and the Ice Strike.—At a special meeting of the Cincinnati Academy of Medicine, July 1, after an address by the president, Dr. Charles A. L. Reed, on the strike conditions in the city, with special reference to the ice strike, the Academy adopted resolutions setting forth that the ice strike has created conditions that remain a menace to the public health, and that other strikes which are threatened will almost equally interfere with the comfort and health of the people, and recommending that all labor disputes regarding public utilities and commodities essential to the life and health of the people be subjected to prompt and final arbitration and demanding a compulsory arbitration law as an effective means of safeguarding the existence of the people against the frequent occurrence of interference with their comfort and welfare through strikes and lockouts.

PENNSYLVANIA

Sanatorium Opened.—The formal opening of the new tuberculosis sanatorium near Wesleyville took place June 19.

Commencement Week Clinics.—During commencement week of the School of Medicine of the University of Pittsburgh, clinics were given in the various hospitals, which have clinical connection with the institution, and there were also laboratory demonstrations at the Medical School Building on the campus.

New Officers.—Woman's Medical Society of Pittsburgh: president, Dr. Luba Robin Goldsmith; vice-president, Dr. Laura

Shrom.——Medical Club of Harrisburg, June 22: president, Dr. Park A. Deckard; secretary-treasurer, Dr. Edward K. Lawson, Penbrook. At its annual meeting the club formally received the charter granted by the Commonwealth of Pennsylvania.

Personal.—Dr. Percival J. Eaton, Pittsburgh, has been elected president of the Associated Harvard Clubs.——Dr. Phaon H. Hermany, Mahanoy City, on the completion of half a century of practice, was presented by his associates with a silver loving cup.——Dr. R. B. Watson, Lochaven, in celebration of his seventy-fifth birthday and his fiftieth anniversary as a practitioner, was given a banquet by the Clinton County Medical Society.——Dr. C. B. Jones, Summerhill, who has been under treatment since May 15 at the Pittsburgh Memorial Hospital on account of electrical shock, has returned home.

Low Death-Rate at Gettysburg.—To the sanitary corps of the United States Army and the Health Department of the state is due in large part, the success of the great Civil War reunion at Gettysburg. Out of 53,000 veterans in camp for four days of extreme hot weather, there were but nine deaths, when in ordinary encampments held by the National Guard, the death-rate averages one a week for each 4,000 men. Every precaution was taken for the health of the old men. Within each camp square there was an incinerator for burning all refuse; every morning each camp street was cleaned and all refuse destroyed. While a number of the veterans were obliged to go to camp hospitals, nearly all were able to leave Gettysburg on July 5. Those who are really ill, will be kept in the Emergency Hospital of the State of Pennsylvania, but very few such patients are expected to remain as the rate of recovery has been very high.

State Society Meeting.—At the annual meeting of the Medical Society of the State of Pennsylvania to be held in Philadelphia, September 22-25, the headquarters will be at the Bellevue-Stratford. The commercial exhibit is to be held in Horticultural Hall; the scientific exhibit will include, in addition to pathologic specimens, an exhibit on surgical anatomy, animal parasites, diseases of animals communicable to man, state laboratory methods, Wassermann reaction, conservation of vision, state tuberculosis exhibits and the x-ray. In addition, cinematograph exhibitions will be given in the Horticultural Hall on Tuesday and Wednesday afternoons and on Thursday afternoon illustrated lantern lectures will be delivered. On Tuesday night, a moving picture of nervous diseases will be given by Dr. T. H. Weisenburg and on the same evening Dr. G. E. Pfahler will show serial radiograms of abdominal conditions. Thursday evening will be devoted to hospital and dispensary work and a paper on the subject will be read by Dr. Pfahler. On Friday there will be an illustrated lecture open to laymen, on "The Relations of Insects to Disease." The program for the section meetings give promise of being more interesting and practical than ever before. Clinics are to be given on Monday and are to begin again on Friday, continuing through Saturday morning.

Philadelphia

Personal.—Dr. J. T. Rugh sailed for Europe, July 5.——Dr. George M. Coates has been elected surgeon to the ear, nose and throat department of the Pennsylvania Hospital.

New Officers.—Philadelphia Laryngological Society at the College of Physicians, Philadelphia, June 26: president, Dr. Edward B. Gleason; secretary, Dr. George M. Coates.

Scarlet Fever in West Philadelphia.—As the result of a small boy, suffering from scarlet fever, attending a church festival, the disease has spread through the neighborhood and an epidemic is feared. The Mount Calvary Presbyterian Church is closed and being fumigated and no services have been held there.

Typhoid Epidemic Continues.—Forty-nine new cases of typhoid fever with eight deaths have been reported to the Board of Health during the week ended June 28. Vigorous prosecution of manufacturers who are polluting the city's filtered water supply with raw river water is planned by Director Cooke of the department of public works.

Pier Hospital for Babies.—Fifty infants were registered on July 1, the opening day of the Race Street Pier Hospital for Babies. Every provision has been made by the Department of Health and Charities to make this one of the best equipped hospitals of its kind in the country. A temporary screen roof to keep out flies and mosquitoes has been erected on the upper deck of the pier over the entire area occupied by the hospital. Drs. Edwin E. Graham, J. P. Crozier Griffiths and Charles A. Fife make up the consulting staff and Drs. J. D. Brittingham, Charles V. Dorworth and H. C. Fish are the attending physicians.

The Curtin Scholarship.—The Philadelphia Alumni Society of the Medical Department of the University of Pennsylvania has decided to endow a scholarship at the University to be known as the Roland G. Curtin Scholarship in recognition of the signal personal work of Dr. Curtin, his eminence as a physician, and his extended service as a clinical teacher and as a loyal son of the medical department of the University. The Alumni Association has contributed for this year $500 toward the endowment fund and a committee has been appointed to make the necessary arrangements to insure the permanency of this scholarship.

City Has Power to Stop Water Pollution.—City Solicitor Ryan notified Director Cooke that the city has unlimited authority to proceed against private owners of mills guilty of contaminating city water. Recent investigations into the causes of the increase in the number of typhoid fever cases in the city developed the fact that unfiltered river water was entering the city's water mains through connections in mills in Kensington. As a result, conditions bordering on an epidemic were recently unearthed by the State Health Department. Last week, Surgeon-General Blue of the United States Public Health Service, detailed Dr. N. H. Foust to make an investigation here.

Pennsylvania Railroad Report.—The Pennsylvania Railroad has issued a statement of its employees killed in 1912. Of 61,443 men employed in train service, 119 lost their lives, seventeen in accidents to trains, freight and passenger. Of 68,000 men employed in shops and on tracks, sixteen died as a result of accidents, none of which was a train wreck. All these 285 deaths, except the seventeen due to train accidents, were, according to the statement, due to trespassing, carelessness or defects in shop machinery. The trains of the railroad, passenger and freight, covered more than 72,000,000 of miles during the year, yet in accidents to them only twenty-one lives were lost, the seventeen employees mentioned above and four passengers.

TEXAS

New Hospital.—Dr. James W. McCarver, Brownwood, has let a contract for a building to be used as a private hospital, with a capacity of ten patients.

City and County Tuberculosis Hospital.—All of the construction work has been completed and most of the furnishings and equipment have already been installed in the new Dallas County and City Tuberculosis Hospital, four miles north of Dallas. The hospital has been built on the cottage plant at a cost of more than $35,000 and will accommodate about sixty patients. The buildings consist of three main cottages with a fourth cottage for the use of nurses, and an additional building for headquarters.

Personal.—Dr. Thad Shaw, Galveston, is spending the summer in Vienna.——Dr. John T. Moore, Houston, has returned from abroad.——Samuel Scothorn, Dallas, has been appointed a member of the State Board of Medical Examiners as a representative of the Osteopathic School, succeeding Dr. Paul M. Heck.——Dr. Taylor Hudson, Belton, who was recently operated on at Temple, has returned home convalescent.——Dr. D. L. Wood, Killeen, fractured his right arm and dislocated his wrist in a fall from a chair recently.

New Officers.—Dallas Medical and Surgical Society, June 28: president, Dr. John M. Neel; secretary, Dr. Franklin A. Pierce.——North Texas Medical Association, June 18: Section on Surgery, Dr. C. R. Johnson, Gainesville, chairman; Dr. S. Webb, Dallas, secretary. Section on Medicine, Dr. G. V. Morton, Fort Worth, chairman; Dr. M. M. Morrison, Denison, secretary. Section on Gynecology and Obstetrics, Dr. C. R. Hannah, Dallas, chairman; Dr. Williard Fiske, Lancaster, secretary. Fort Worth was selected as the next place of meeting.

WASHINGTON

New Officers.—Walla Walla Valley Medical Society at Walla Walla, June 27: president, Dr. C. E. Montgomery; secretary, Dr. Y. C. Blalock.——Whitman County Medical Association: president, Dr. George M. McGregor, Garfield; secretary and treasurer, Dr. L. G. Kimzey, Pullman.

Physicians Want Library.—At the May meeting of the Spokane Medical Society it was voted to establish a library, and a committee was appointed to see to the work and confer with the city librarian regarding the establishment of a branch which will give them access to medical works and periodicals.

Personal.—Dr. C. W. Lane has resigned as secretary and treasurer of the Medical Association of the U. S. Indian Service, and has moved from Lincoln to Blaine, where he has been placed in charge of the west side of the Colville Indian Reservation.——Dr. G. A. Downs has been appointed police physician of Spokane, vice Dr. William M. Newman, resigned, and he has named Dr. R. Ingalls Newell as assistant in emergency work.——Dr. and Mrs. Peter D. McCornack, Spokane, have started for Europe.

WISCONSIN

New Officers.—Walworth County Medical Society at Elkhorn, June 12: president, Dr. H. N. O'Brien, Darien; secretary, Dr. M. V. DeWire, Sharon.

New State Board Members.—Governor McGovern on June 26 appointed Drs. F. C. Haney, Watertown, and Milton Rice, Milwaukee, Members of the State Medical Board.

Damages Awarded Physician.—A jury in Fond-du-Lac is said to have awarded Dr. J. P. Cornell damages amounting to $5.500 in a libel action for $15.000 damages brought against Dr. J. W. Ehmer, Lomira.

Desires that Names be not Published.—At a recent meeting of the Waupaca County Medical Society, resolutions were adopted that the society express its disapproval of the practice of the publication of names of physicians in connection with news relating to operations or illness and earnestly requesting publishers of newspapers to abstain from this practice.

Hospital Items.—The Good Samaritan Hospital Association of Milwaukee has inaugurated a ninety-day campaign to raise $100.000 for a new hospital building at Greenfield Avenue and Hanover Street. The building is to be four stories in height and 65 by 75 feet and will accommodate 125 patients.——Subscriptions for the new Mount Sinai Hospital-building fund amount to more than $23,000.

Personal.—Dr. John J. McShane has been reelected health commissioner of Kenosha.——Dr. H. A. Norden, Sturgeon Bay, who has taken charge of the Chicago-Winfield Tuberculosis Sanatorium, was given a farewell banquet by the Twenty Club.——Dr. Henry Fehr, Burlington, has disposed of his interests in the Baraboo Hospital and has moved to Los Angeles.——Dr. and Mrs. E. F. Woods, Janesville, have sailed for Europe.——Dr. George P. Barth, Milwaukee, has been elected president of the Wisconsin Natural History Society.——Dr. Dennis J. Hayes, Milwaukee, who was seriously injured in an automobile accident last winter, has returned from Hot Springs, Ark., entirely recovered.

Sanatorium Notes.—The Milwaukee County Board committee on the tuberculosis sanatorium bond issue has decided to issue $600,000 in bond for the erection of a new tuberculosis sanatorium.——Kenosha has made arrangements to care for her patients in advanced stages of tuberculosis in various county sanatoriums of the state.——The Neenah City Council has made appropriations to take sixteen school children threatened with tuberculosis to a camp near Waupaca for the summer months.——The Dane County Board of Supervisors has passed a resolution to appoint a committee to procure a site for a county tuberculosis sanatorium at a cost not to exceed $5,000, to prepare plans and to let the contract for the building, the total expense not to exceed $15,000.——The Winnebago County Tuberculosis Sanatorium is to be located in the town of Vinland where a site of five acres has been purchased at a cost of $2,500.

GENERAL

Medical Examiners Elect.—At the annual meeting of the American Association of Medical Examiners in Minneapolis, June 17, Dr. Henry Wireman Cook, Minneapolis, was elected president.

Safety and Sanitation Exposition.—The International Exposition of Safety and Sanitation will be held in New York City, December 11 to 20, under the auspices of the American Museum of Safety. The exposition will be arranged in the following departments and sections: Accident prevention department, dealing with general and particular accidents, first aid to the injured, safety measures, workman's insurance, etc.; industrial hygiene department, dealing with the city and home hygienics, and the mutuality department. There will also be sections on electricity, railway safety, street railways, safety at sea, etc., with extensive exhibits.

Bequests and Donations.—The following bequests and donations have been announced:

Methodist-Episcopal Hospital, South Brooklyn, N. Y., fifty shares of stock in the Atchison, Topeka and Santa Fe Railroad by the will of William H. Loomis, Brooklyn.

The Home, Denver, an institution for the care and treatment of tuberculosis, thirty-four acres of land in Jefferson County, donated by Mr. David Brothers, Denver.

Mount Sinai Hospital, Milwaukee, is a beneficiary under the will of the late Joseph Breslauer.

Milwaukee Maternity Hospital, $8,000 by the Flag Day Association.

St. Luke's Hospital, Detroit, $50,000 by the will of the late Frederick E. Briggs.

Lawrence, Mass., General Hospital, $20,000 for a building for a children's ward in memory of Lydia Maria Shattuck, by the will of the late Joseph Shattuck.

St. John's Guild and the Floating and Seaside Hospital for children, New York City, each $5.000.

The Association for the Aid of Crippled Children and the Hospital Saturday and Sunday Association, New York, each $10,000 by the will of the late Charles Kohler.

The Presbyterian Hospital a contingent bequest of about $30.000 by the will of Frederick Baker.

German Charities of Brooklyn, $6.000 by the will of Eliza Wald.

The German Hospital, New York City, $44.000 from Emperor William II, as a building fund for the Kaiser Wilhelm pavilion, in the new wing of the hospital.

The Brooklyn Hospital and Brooklyn Eye and Ear Hospital each $5.000 by the will of Charles Hull.

Abington, Pa., General Hospital, $50,000 donation by George W. Eltins.

Jefferson Presbyterian and German Hospitals, Philadelphia, one-tenth of the estate of James F. Hope, the value of which is declared to be "$100,000 and upwards."

FOREIGN

Annual Meeting of Internists of the Northland.—This eighth annual meeting is to be held at Lund, August 28-30, with K. Petren in the chair. Diabetes and radiotherapy are the topics announced for discussion.

The Cyon Prize.—The biennial prize of $600 founded by Elia de Cyon is open for the third international competition until March 1, 1915. The prize will be awarded for the best printed or manuscript work (printed since March, 1913) on the functions of the internal ear, thyroid, hypophysis or pineal gland. The scientific institution in charge of the competition is the Academy of Sciences at Bologna, via Zamboni 33.

LONDON LETTER

(From Our Regular Correspondent)

London, June 28, 1913.

Sir Jonathan Hutchinson

Sir Jonathan Hutchinson, F.R.C.S., F.R.S., D.C.L. (Oxon.), LL.D. (Cantab.), etc., consulting surgeon to the London Hospital and emeritus professor of surgery in the Medical College; the greatest clinician of this or probably any other age, died at his residence, Haslemere, Surry, June 23, in his eighty-fifth year. He had been in feeble health for some time, and death was due to old age. He was born at Selby, Yorkshire, in 1828, and like many distinguished members of the profession he was of Quaker stock. He was educated at home and at a day school. From childhood he showed remarkably studious habits. At 16 he was apprenticed (as was the custom in those days) to Mr. Caleb Williams, a leading surgeon in the city of York. In 1847 he entered as a student at St. Bartholomew's Hospital, where his abilities and industry attracted the attention of one of the great surgeons of the day, Sir William Lawrence, and of Mr. (afterward Sir James) Paget. In this year he became qualified, and with the intention of becoming a medical missionary he studied at several special hospitals, notably the Royal London Ophthalmic Hospital and the Blackfriars' Hospital for Diseases of the Skin. In 1854 he received his first hospital appointment of surgeon to the Metropolitan Free Hospital. While making his reputation as a surgeon he worked at medical journalism. He visited various hospitals and wrote weekly reports in the *Medical Times and Gazette*, the most important rival of the *Lancet* in those days. Soon he was appointed surgeon to the Royal London Ophthalmic Hospital and the Blackfriars' Hospital for Diseases of the Skin. In 1859 he was appointed assistant surgeon to the London Hospital, and from 1862 was lecturer in the medical college on the principles and practice of surgery; in 1863 he also lectured on medical ophthalmology. He also became attached to the Royal Lock Hospital in 1862. In 1865 he gained the Astley Cooper clinical prize of Guy's Hospital for an essay on injuries of the head. At the Royal College of Surgeons he was Hunterian professor of surgery and pathology from 1879 to 1883. In the former year he was elected to the council and in 1880 was appointed to the court of examiners. In 1888 he was Bradshaw lecturer, in 1889 president and in 1891 Hunterian orator. He received honorary degrees from most of the universities of this country and was appointed member of many foreign medical societies.

His holding of so many hospital appointments was unfavorably criticized. He defended himself on the ground that at every one of the hospitals he advocated additional appointments and hence did no injustice to others; while it was essential for his own scheme of work to secure opportunities of observation at special hospitals for the sake of the light thrown by the special on the general, and vice versa. Here we have the keynote of his life work. His contention was abundantly justified by the result because in every subject which he touched he became a foremost authority and a great teacher. His fame as a surgeon, a dermatologist, a syphilographer, an ophthalmologist and a neurologist was world-wide. No man ever combined such a minute knowledge of many specialties with such a wide philosophic grasp. He was well termed the universal specialist. He was entirely free from the narrow outlook which working at a specialty engenders in even the most eminent. His industry was prodigious and was maintained by an enthusiasm for knowledge which never flagged and extended far beyond the professional subjects which he cultivated so successfully. Indeed, his recreation was to go from the study of one branch of knowledge to another. One of his friends when asked what was his amusement aptly said, "He has no amusement or rather it is all amusement." He had an extraordinarily accurate and minute knowledge of geology and history, and was what is best described by the old-fashioned term "a naturalist" of no mean order. Like his great predecessor, Hunter, he was an assiduous collector of specimens and an enthusiast for museums. During his whole career he employed artists to make water-color drawings of his cases, which he finally collected into a private museum, the "Clinical Museum." With the single exception of the Hôpital St. Louis in Paris no other attempt has ever been made to illustrate systematically the appearance of disease in the living subject. At this museum he held weekly demonstrations to which the profession was invited to send interesting cases. However rare the case he could parallel it with others from his vast experience, and often would exhibit a portrait of the condition present in the patient. It was he who first suggested the holding of a museum at the annual meetings of the British Medical Association. When the Medical Graduates College and Polyclinic was founded in 1899, mainly through his efforts, he presented his museum to it.

GENERAL CULTURE

He was interested in many subjects, and his greatest pleasure was to teach. Near his country residence at Haslemere he established an educational museum containing objects illustrating a great variety of subjects: rocks, fossils, stuffed animals, skeletons, plants, flowers, birds' nests and eggs. A remarkable exhibit illustrates the history of the centuries from the dawn of civilization among the Egyptians until the present day. Moreover, there is an aviary and vivarium in which the chief birds and animals of the locality are kept. At the museum on Sunday afternoons he would deliver lectures on such varied subjects as the "Age of the Earth," the "Poet Cowper" and "Tuberculosis and Leprosy as Social Problems." In connection with the museum he founded a journal which he termed the *Home University*. Its object was to offer the home student the best substitute for university residence which could be devised: the journal was neither to be a school book, an encyclopedia, nor a journal of science and literature, but was to partake of the character of all three. To this journal he contributed articles on such diverse subjects as "the poet Keats," "Etruscan Remains," a "Lecture on Shells." a "Classification of Insects," a "Conversation on the Elephant," "Mammoth and Mastodon," the "Ascent of Sap in Trees," and the "Unity of Italy." His medical work is so wide-spread that it will be treated best under several heads

SYPHILIS

As a syphilographer he stands alone; no other authority displayed such a minute knowledge of the disease or made such important contributions to the subject. In 1862 he discovered that interstitial keratitis, the called "strumous" ophthalmia, was a manifestation of inherited syphilis. Soon afterward followed the discovery of the peculiarities of the teeth and the deafness due to the disease (the "triad of Hutchinson"). His method of treatment by small, long-continued doses of mercury became universal and held the field until the introduction of injection treatment and the use of salvarsan. It may well be questiontd whether or not these are improvements. Hutchinson himself showed and he has been supported by Gaucher of Paris, that mercurial injections are dangerous. The same can be said for salvarsan, and the want of faith of its advocates is revealed by their recommending its combination with the mercurial course. A daring generalization made by him in those days when syphilis was regarded quite apart from other infections and when bacteriology was in its infancy was the classification of syphilis among the exanthems (small-pox, scarlatina, etc.). He described the protean manifestations of the disease with great minuteness and showed how it imitated many diseases and yet how the imitations were scarcely ever complete and therefore could be distinguished. An example of his great sagacity was his view that yaws is syphilis modified by race and climate. Although he had never seen a case of yaws he came to this conclusion from a study of portraits of the disease and the descriptions of its course and treatment by colonial surgeons. He maintained this in spite of almost universal opposition. His apparent temerity is justified by the current view that the spirochete of yaws differs only slightly from that of syphilis.

LEPROSY

From an early period he interested himself in this disease. As long ago as 1863 he asserted that its cause was "some ingredient or parasite generated by or introduced into fish which has not been cured or cured badly." A study of the geographical distribution convinced him that neither climate nor race had anything to do with the disease; the fact that it prevailed almost exclusively on islands, the shores of continents and along the course of rivers led to the conviction that it must in some way be connected with the eating of fish. From this hypothesis two corollaries followed—that leprosy is not contagious and that segregation is of little use. The discovery of the bacillus in 1874 by Hansen caused a revival of the contagionist doctrine. In 1901 he went to South Africa and in the following year to India to investigate statements made by certain observers that leprosy existed among those who never tasted fish. He found that these statements were not correct except in the case of certain natives in South Africa who had associated with lepers. The latter had in all cases presumably eaten bad fish. He came to the conclusion that the natives who had associated with them had acquired the disease by "commensal" communication, that is, eating fish contaminated by lepers' hands. He collected an enormous amount of evidence in favor of the fish hypothesis and marshaled it with great acumen and dialectic skill. The following are some of his most important facts: Leprosy is more prevalent among Roman Catholics, who eat fish for religious reasons. The Jains and high caste Brahmans, who are strict vegetarians, are almost free from leprosy. The number of lepers in the whole of India is not more than 5 in ten thousand, while in the fishing island of Minicoy it is 150. In China leprosy abounds in the South, where fish is largely consumed and salt is imported and taxed; while in the North, where fish is scarce and salt abundant, there are large districts in which it is unknown. The disappearance of leprosy with the advance of civilization he explained by the fish hypothesis. The dietetic habits of the people altered. In one district in Norway, a strip on the western coast, the disease lingers. Here the land is poor and fish is the principal food and is preferred tainted.

DERMATOLOGY

In clinical knowledge or diseases of the skin Mr. Hutchinson was unrivaled. While other dermatologists contented themselves with the problem of labeling a case according to the conventional classification, he had advanced far beyond that point. Indeed, he had a contempt for what he called "nominal diagnosis." Thus he said, "The present plan of trying to make a small number of names suffice for a vast variety of objects, and of slavishly grouping together because our forefathers did it under one and the same names diseases which differ widely, has encumbered us too long. Probably there is no better plan in aid of exactitude in clinical observation than to take type cases, to follow them to their end, describe them in detail and illustrate them by photography or drawings. By the side of the type case place all others which really fit with it and none else." This plan he assiduously followed. Probably no clinician ever had a mind stocked with so many types of disease. It was truly said of him that if any one had a very rare case and took it to him he could always parallel it, and at the medical societies the younger men became afraid to use the term "unique case" when he was present. He would get up and relate how he had seen a case quite similar a score of years before and promise to produce a picture of it at the next meeting. He had an extraordinarily retentive memory; he never seemed to forget anything of importance and could at a moment's notice speak accurately and copiously on any subject. So minute were his observations that he distinguished a score of varieties of lupus. All his work has been so carefully done that there is little that is not generally accepted, and what is not, has never been confuted.

The Progress of Cremation

At the annual meeting of the members of the Cremation Society, which has just been held, Sir Charles Cameron, the president, said that the movement was progressing steadily in Great Britain, but by no means so rapidly as he would like. During the eleven years which elapsed between the opening of the first crematorium in this country at Woking and the fourth at Liverpool, in 1896, the number of cremations was less by sixty-two than the total for the last year. In the thirteen years since 1896 nine other crematoriums have been established and 11,000 bodies had been burnt. The number of cremations in each year had exceeded those of the preceding ones, and last year amounted to 1,134. So far the movement has made little progress among the working class, most of the persons cremated being highly educated and often eminent.

Sleeping-Sickness and Big Game

Dr. Warrington Yorke of the Liverpool School of Tropical Medicine, in an address on this subject, has stated that the number of cases of sleeping-sickness in Rhodesia and Nyasaland is likely to increase. Eleven cases, one of which was in a European, had been found recently in an isolated fly belt south of the Zambesi. The human trypanosome has also been found in a certain antelope of this district. It is proposed to remove the native population, which numbers about 3,000, to a fly-free area. Though this would save them, Dr. Yorke believes that it would turn the district into what would practically be a game preserve. The fauna would multiply and gradually spread into the surrounding district and probably the fly would increase and spread *pari passu* until the invasion of the surrounding districts demanded further removals. He proposed that instead of the population being removed the fauna be destroyed by constant shooting. After two or three years it would be possible to ascertain what effect this had on the fly and on the number of cases of sleeping-sickness.

The Visitors' Room in Asylums as a Source of Insanity

The *Hospital* calls attention to a source of insanity which appears to have been overlooked. It has often been remarked how frequently the mentally afflicted intermarry, as if a family taint of this kind were a positive attraction to another laboring under the same stigma. One of the causes of this appears to be the occasion for courtships which the visiting-rooms of mental hospitals affords. There the relatives of patients in the institutions meet, and such meetings are often the occasion of an intimacy which ends in matrimony. The *Hospital* suggests as a remedy not further restrictions on visitors, but the segregation of the sexes in the visiting-rooms.

The International Congress of Medicine

The section of pathology will meet at the Royal College of Surgeons. The president is Professor Shattock. There will be a discussion jointly with the section of anatomy on the "Excitatory and Connecting Muscular System of the Heart." The anatomic side will be taken by Professor His; Dr. Josué will speak on the localization of function, and Dr. T. Lewis will take part. Another subject is the "Pathology of Fats and Lipoids," on which much work has been done recently. It will be introduced by Dr. Iver Hang of Lund, and Dr. Sigmund Frankel of Vienna. The subject of the "Grafting of Normal Tissues" will be introduced by Professor Borst and Dr. Burrows. The "Pathology of Shock" will be introduced by Dr. Crile and Prof. Yandell Henderson. The "Effect of Radio-Active Substances on the Tissues" will be opened by Dr. Hartwig and Dr. Lazarus Barlow. Subjects on which independent papers will be presented are "Hyperblastosis," "Tetany," "Gastric Ulcer," the "Influence of Asphyxia on the Kidney," and the "Rigidity of Calcified Arteries."

PARIS LETTER

(From Our Regular Correspondent)

Paris, June 20, 1913.

Founding of an Institute of Hydrology and Climatology

A department or institute of hydrology and climatology has just been founded at the Ecole des hautes études (Collège de France). It is intended to make and publish studies on the mineral waters, the air, the hygienic conditions, the sources of the water at the various watering-places and to carry on experiments in regard to the therapeutic use of the waters. The institute consists of six laboratories: (1) the laboratory of hydrologic and climatic physiology under the direction of Dr. d'Arsonval, professor of the Collège de France; (2) the laboratory of hydrologic and physiologic chemistry under the direction of M. Charles Moureu, professor of the Ecole supérieure de pharmacie de Paris; (3) the laboratory of analytic hydrologic chemistry under the direction of M. Georges Urbain, professor of the Faculté des sciences de Paris; (4) the laboratory of hydrologic and climatologic therapeutics under the direction of Dr. Albert Robin, professor at the Faculté de médicine de Paris; (5) the laboratory of general hydrology under the direction of Dr. G. Bardet, vice-president of the Société de thérapeutique; (6) the laboratory of thermal and climatic hygiene under the direction of Dr. Bordas, assistant to Professor d'Arsonval of the Collège de France.

Changes in Population in 1912

Statistics of the population of France in 1912 have just been published. The excess of births over deaths was about 57,911; in other words, the average population has increased by 15 per ten thousand inhabitants, while in 1911 there was an excess of 34,869 deaths; that is to say, a diminution in the population of 9 per ten thousand. This improvement in the situation is due to a reduction in the number of deaths. The number of deaths has increased by only 8,537. The number of births was 750,651, while for the five years preceding, 1907-1911, the annual average was 770,186. To appreciate the advance of depopulation, it is only necessary to remark that before 1907, France never had less than eight hundred thousand births, before 1887 she never had less than nine hundred thousand and before 1867 the figure surpassed or approximated one million. As for deaths, there were in 1912, 692,740, which represents a diminution of 84,243 in comparison with the previous year. This diminution is due to a double cause. The summer of 1911 was excessively hot and dry, while the summer of 1912 was remarkably cool. In 1911 the intolerable heat killed many young children and a great number of valetudinarians, who except for this unusual season would have prolonged their existence until the following year. The principal cause of the lowering of the mortality in 1912, therefore, was the cool summer, which considerably lowered the mortality of infants in one year. However this may be, if the number of births was higher in 1912, the improvement was insignificant. Dr. Jacques Bertillon calls attention to the fact that little Holland with one-eighth the population of France has had a larger absolute increase each year. In 1911 her population increased by 79,745 inhabitants. The only portions of French territory in which the birth-rate was higher than the death-rate are the regions of the north, Brittany, the frontiers of the east, Limousin and Corsica. The decrease in the population becomes more marked each year in the basins of the Garonne and the Rhone. The number of marriages increased in 1912 to 311,929. This is a high figure which tends to increase. Few countries have a larger rate in proportion to the population. The number of divorces was 14,579.

Compulsory Reporting of Tuberculosis

The Académie de médecine has just closed a long discussion of Professor Albert Robin's paper with regard to the compulsory notification of tuberculosis. During the discussion, which began last October, several members of the Académie de médicine have opposed the principle of notification on the ground that practitioners through a great number of medical organizations have declared notification to be inefficacious and deceptive. They even assert that declaration of tuberculosis is likely to prevent patients from consulting their physician. On the other hand, they insist on the necessity of compulsory disinfection of dwellings, which is easy to carry out at any change of tenants without violation of professional secrecy, and which gives a really efficacious guarantee against the propagation of all contagious diseases. Nevertheless, the permanent committee of the Académie on tuberculosis declares itself in favor of compulsory reporting of all cases of open tuberculosis as soon as the diagnosis is established.

First Chair of Otorhinolaryngology in France

A bill has just been passed making the necessary monetary provision for the establishment of a chair of otorhinolaryngology in the Faculté de médecine de Bordeaux. This really means only a change in the complemental courses given for several years by Dr. Moure, professor of otorhinolaryngology, and Dr. Régis, professor of mental diseases. The former has the first chair of otorhinolaryngology in France.

A Traveling Scholarship Founded by the Montpellier Medical School

Professor Grasset has placed at the disposal of the Faculté de médecine de Montpellier the sum of $2,000 (10,000 francs) from the Broquette-Gonin prize which was recently awarded him by the French Academy (The Journal, June 21, 1913, p. 1970). The faculty of the school has decided that the gift shall be used for a traveling scholarship, to be awarded for five years to the most deserving French medical student at the school.

Candidates for Prizes of the International Medical Congress

It is well known that three important prizes are to be awarded by the International Medical Congress during the meeting which is to be held soon in London, the Moscow prize, the Paris prize and the Hungarian prize. The French committee has proposed for the Moscow prize Prof. Charles Richet, on the grounds of his work on anaphylaxis; for the Paris prize Prof. F. Widal, discoverer of the serodiagnosis of typhoid fever and of the salt-free diet in the treatment of nephritis; and for the Hungarian prize, Drs. de Beurmann and Gougerot for their work on cutaneous sprotrichosis.

The Law with Regard to Periods of Relief for Women before and after Childbirth

A law was promulgated June 17 that pregnant women may leave their occupation without warning and without being liable to forfeiture of pay, whether in either industrial or commercial establishments or their dependencies, public or private, and whether professional or charitable. It is forbidden to employ women within four weeks following their delivery. Any French woman without resources, who is customarily employed by another at a salary as a workwoman or domestic servant, has a right during the period preceding and following childbirth to a daily allowance. Before the birth, the applicant must produce a medical certificate that she cannot work without danger to herself or child. Afterward the allowance is to be given during the first four weeks. It is not to be continued for a total period of over eight weeks, including the time preceding and the time after the delivery. She cannot receive this allowance unless she refrains from exercises of her habitual profession and observes all necessary hygienic rules for herself and for the infant in conforming to the instructions which will be given to her by a person designated by the Bureau of Assistance. The daily allowance will be reduced to one-half if the patient is placed in a hospital, and if she has no other living children under 13 years.

Simple Migraine and Ophthalmic Migraine

Dr Sicard, *agrégé* of the Faculté de médecine de Paris, reports some interesting observations that he made on specimens of cerebrospinal fluid taken during attacks of simple migraine and ophthalmic migraine. During simple migraine, cerebrospinal fluid shows neither hyperleukocytosis nor hyperalbuminosis, and keeps its ordinary content of urea and glucose. Alone, its pressure is sometimes, but not always, increased. During the crisis of ophthalmic migraine, the cerebrospinal fluid may either keep its normal character or show hyperalbuminosis and lymphocytosis. In the first case the prognosis is good. The ophthalmic migraine is only a "neuro-arthritic" episode. In the second case, the changes in the cerebrospinal fluid indicate an organic meningocortical reaction (syphilitic or tuberculous). Sicard reports cases of two women in whom one or several crises of ophthalmic migraine and reaction of cerebrospinal fluid occurred as the only precursory sign of a meningeal lesion, several months before the outbreak of the classic symptoms of syphilis or meningeal tuberculosis.

The Necessity of Instruction in Legal Medicine in Law Schools

Because of the scientific questions mentioned in my previous letter, the third Congrès de médecine légale de langue française took up the question of instruction in legal medicine in the law schools. On several occasions some professors of legal medicine have attempted to organize a series of lessons for law students, but no concerted, and few official attempts to this end have been made. The consensus of opinion at the meeting was that magistrates should understand the more usual medical terms and should have some idea of diseases and lesions that medical experts describe in their reports. At present the magistrates generally read only the conclusions of these reports and not the considerations for the latter are generally based on anatomic and physiologic ideas which are completely beyond them. Therefore the resolution was passed that the elements of legal medicine, including anthropometry and the Bertillon system, should be imparted to law students.

Purification of Oysters

Of all the means for preventing the use for food of contaminated oysters, "stabulation" or deposit of the oyster in pure water for sufficient time before their use seems by far the simplest and most rational. Fabre-Domergue, inspector general of the fisheries, proposes the use for this purpose of basins fed with filtered water, removed often enough to insure complete evacuation of the liquid contained in the shells and of the matter in their digestive apparatus. He recently read a paper before the Académie de médecine on the results obtained by this procedure. It may be considered as an established fact that the procedure insures the purification of the mollusk in six or seven days and that it makes it unnecessary to fear any infection from them.

BERLIN LETTER

(*From Our Regular Correspondent*)

Berlin, June 20, 1913.

Personal

Professor Sauerbruch, director of the surgical clinic at Zurich, has been chosen as the successor of the deceased Professor Bramann of Halle. In all probability he will accept the call.

Professor Lexer of Jena was also considered for the place, but he refused it—probably because he can calculate with certainty that he will some time go to Munich as the successor of Professor Angerer, which will be more agreeable to him, as he is a native of Bavaria.

Professor Hofmann, director of the hygienic institute at Leipsic, celebrated his seventieth birthday, June 14.

Mehlhausen, for many years the worthy medical director of the Berlin Charité Hospital, died June 15, at the age of 89.

Professor Dührssen, the well-known gynecologist, who has suffered for some time from a severe

has removed to Stuttgart.

Privy Councillor Schüle, the well-known psychiatrist, director of the insane hospital at Illenau, has celebrated the fiftieth anniversary of his medical graduation.

Professor Meissen, head of the well-known tuberculosis sanatorium, Hoheneff, resigned his position July 1.

A bacteriologic laboratory has been added to the institute for cancer and tuberculosis research recently founded at Hamburg. Dr. H. C. Plaut has been placed in charge.

The Kaiser's Jubilee

The twenty-fifth anniversary of our kaiser's accession to the throne was commemorated June 15, and it is fitting for me to refer to it, not only on account of the large number of German physicians who have settled in America and not merely because Andrew Carnegie, as head of the American delegation, congratulated the emperor in person, but also on account of the fact that the kaiser has always shown a lively interest in medicine as well as in science of every sort.

The emperor stood in especially close relations to the deceased surgeon, Von Bergmann. The intimacy began in connection with the illness of his father, the Emperor Frierich, and it is worth mentioning in this connection that in the dispute between the German physicians and the English laryngologist, Morrel Mackenzie, the emperor took the part of the former against his mother, the Empress Friedrich. By Bergmann he was afterward interested in a number of medical questions, especially the development of the medical postgraduate instruction and also the founding of the Kaiserin Friedrich Haus, the central headquarters for the work. At the dedication of this building the emperor was present with some of his brothers and sisters and children and, as has so often happened, although he was not on the program, he took the occasion to emphasize the importance of medical postgraduate work and to express the interest which this enterprise excited in him as well as in his mother. Also on visiting the Rudolph Virchow hospital he expressed the wish that this institution might be devoted to the postgraduate instruction of physicians.

His keen interest in the person and work of Robert Koch was repeatedly manifested. When Koch set out on the second expedition to East Africa for the study of sleeping-sickness, he delivered a lecture at the wish and in the presence of the emperor on the task which the expedition had to perform, and it was interesting to see with what attention the emperor not only followed the discourse, but also closely examined the preparations under the microscope of gnats, trypanosomes, etc., under the direction of Koch. The esteem in which the kaiser held Koch is to be seen from the unusually large contribution of $25,000 (100,000 marks) which he made to the fund for the institution devoted to the campaign against tuberculosis in commemoration of Robert Koch (Robert Koch Stifting zur Bekämpfung der Tuberkulose) which was initiated by J. Schwalbe, editor of the *Deutsche medizinische Wochenschrift*. Carnegie donated $125,000 (500,000 marks) to this fund. Of late Ehrlich enjoys the special esteem of the emperor. The emperor was present on the occasion of the address which Ehrlich delivered at the dedication of the first scientific institute founded by the Kaiser-Wilhelm-Gesellschaft, and in the intermission of a quarter of an hour which followed the address he questioned him thoroughly on several important points, as Ehrlich informed me with his own lips.

From all this it can be seen that the kaiser is thoroughly in touch with scientific medicine, thus differing from many other sovereigns. Some years ago when the furious crowd of German antivaccinationists asserted that the children of the emperor had not been vaccinated, he issued a public denial. As soon as a new discovery in the field of scientific medicine is announced, he seeks for direct information from experts, so as to obtain a more exact knowledge of the subject of the announcement.

The encouragement which athletics in Germany has received from him is well known. He has repeatedly advocated the modern development of hospitals. He may also be credited with the fulfilment in recent years of the wish long entertained by German physicians of seeing a physician at the head of the medical department of the government. The foundation of a workingmen's children's home at the seaside resort, Ahlbeck, is not only to be referred to his initiative, but was actually completed from his private means. Finally it should be noted that the kaiser has expressed the wish that all the funds which are contemplated in honor of the anniversary of his accession should really be devoted exclusively to philanthropic purposes and as a result societies, corporations and private individuals have designated their contributions exclusively for this purpose, amounting in all to a sum of about $25,000,000 (100,000,000 marks). Among these the institutions concerned with public health have especially been remembered.

The Theater in the Service of Hygiene

Under the initiative of the German society for the campaign against venereal diseases (Deutsche Gesellschaft zur Bekämpfung der Geschlechtskrankheiten), Brieux' drama entitled "Damaged Goods" (*Die Schiffbrüchigen—Les avariés*), will be performed in the *Deutsches Theater* during the month of July. The work of the well-known French author treats of the tragedy of a syphilitic and the havoc which this disease caused in his later married life. The piece is designed for the purpose of educating the public, and is said to be especially impressive and effective on the stage.

The Influence of Physical and Social Relations of the Mother on the Body-Weight of the New-Born Child

Dr. von Gutfeld, assistant at the university gynecologic clinic at the Charité in Berlin, has made a statistical investigation of the influence of the physical and social relations of the mother on the weight of the new-born child, based on 5,000 cases observed in the period from Jan. 1, 1907, to March 1, 1909. He reaches the following interesting results:

Among children whose mothers are of equal age, the boys are, as a rule, larger and heavier and have a larger cranial compass than girls. Even very young mothers are capable of bearing well-developed children with normal average measurements. The length and weight of the children rise constantly with the age of the mother, reaching their maximum at from 28 to 35 years. Male infants from any type of pregnancy are larger and heavier and have a larger compass of skull than female infants of a similar pregnancy. The values rise until the fourth pregnancy and then maintain themselves at approximately the same height.

Legitimate male children of any type of pregnancy have higher measurements than illegitimate of a similar pregnancy; but with female children the reverse conditions prevail. Male children in general without reference to the number of pregnancies, whether legitimate or illegitimate, show higher values than the corresponding female children. Children of domestic servants are larger and heavier and have a larger compass of skull than children of factory working women. The foregoing point is to be explained by the social position of the mother: Among mothers of illegitimate children domestic servants are more favorably situated than other working women. The length, weight and cranial compass of the children are proportional to the height of the mother. Similar relations are found in still-born children as among those born living. Boys show larger measurements than girls and legitimate children are larger than illegitimate. Multiple children in general are inferior to those of single birth in height, weight and cranial compass, but cases also occur in which both twins have normal measurements.

Marriages

Edward Lorraine Young, Jr., M.D., Jamaica Plain, Boston, to Miss Charlotte Elizabeth Wales of Dorchester, Boston, June 24.

Bruce Emerson Lindsey, M.D., Columbus, Ohio, to Miss Harriet Bliss, both of Columbus, Ohio, at Columbus, recently.

Arthur D. Houghton, M.D., Los Angeles, Cal., to Miss Florence I. Gildersleeve of New York City, at Chicago, June 23

R. de Leclaire Foster, M.D., San Diego, Cal., to Miss B Gordon Smith of San Jose, Cal., at San Francisco, June 21.

George A. Anderson, M. D., Greystone Park, N. J., to Miss Minnie P. Newman, at Catonsville, Md., June 25.

Samuel Wakefield Swigart, M.D., Lewistown, Pa., to Miss Maude Mabel Mitchell of Wattsburg, Pa., June 11.

Carl Arthur Hedblom, M.D., Shanghai, China, to Miss Ellenor Pease of Georgetown, Colo., June 21.

Frederick Scriver Spearman, M.D., Whiting, Iowa, to Miss Carrie Esther Hoar, Cnawa, Iowa, June 18.

John Francis Lowney, M.D., Fall River, Mass., to Miss Catherine Teresa Barry of Boston, June 30.

Frank Hicks Walke, M.D., Shreveport, La., to Miss Helen Barrow Larrimore, at Baltimore, June 12.

William Cyrus Stewart, M.D., St. Louis, to Miss Amelia Bernard of East St. Louis, Ill., June 24.

Chester Lloyd Putnam, M.D., Holstein, Iowa, to Miss Susie Emarine of Alta, Iowa, June 3.

William Branower, M.D., to Miss Charlotte Gladstone, both of New York City, June 22.

Roland Houston Cranford, M.D., to Miss Lena Miller, both of Moselle, Miss., June 22.

Clough Henry Blake, M.D., to Miss Elma Pitts, both of Big Creek, S. C., June 17.

Le Roy Philip Kuhn, M.D., to Miss Grace Engebretsen, both of Chicago, June 28.

James Allen Jackson, M.D., to Miss Hazel M. Craig, both of Philadelphia, June 22.

John Babst Blake, M.D., Boston, to Miss Madge Barney of St. Louis, June 25.

Paul Brown, M.D., Baltimore, to Miss Viola Edmondson, at Baltimore, June 25.

Deaths

Edward Everett Hyde, A.B., M.D., Assistant to the Editor of The Journal, died in the Presbyterian Hospital, Chicago, July 4, after a short illness, from acute myelogenous leukemia, aged 38.

He was born in Galesburg, Ill., Jan. 19, 1875, the son of the Rev. Azariah and Maria L. Everett Hyde; received his academic degree from Knox College, Galesburg, in 1896 and then entered the College of Physicians and Surgeons, Chicago, from which he graduated in 1900. On June 15, 1900, Dr. Hyde was ordained to the Christian ministry and in November, 1900, sailed from San Francisco for the Caroline Islands as a medical missionary, under the auspices of the American Board of Commissioners of Foreign Missions, arriving at Ruk, his post of duty, in February, 1901. On account of the ill health of his wife he returned from the Caroline Islands early in 1902 and coming to Chicago in February of that year, became a member of the staff of The Journal of the American Medical Association and continued in the capacity above noted until his death.

He was a fellow of the American Medical Association and a member of the Illinois State Medical Society and Chicago Medical Society. He resided in Wilmette, Ill., and was a deacon of the Wilmette Congregational Church.

He was accustomed to attend the annual meetings of the Association, where from time to time he acted as editor of the *Daily Bulletin*, and this work he did most acceptably at the Minneapolis meeting. He was in ill health on his return from Minneapolis, but, supposing he was only tired by the strain of the meeting, he remained at work. The serious nature of his illness became evident only a few days before his death. He was then taken to the Presbyterian Hospital, where he died, Friday, July 4, at 9:45 p. m. The funeral was held at his home in Wilmette, July 7, and his remains were cremated at Graceland the same day.

Edward Everett Hyde, A.B., M.D., 1875-1913

Robert Simonton Young, M.D. New York University, New York City, 1881; of Concord, N. C.; a fellow of the American Medical Association; a member of the Association of Military Surgeons of the United States and a member of the Medical Society of the State of North Carolina; surgeon-general of North Carolina for two terms; local surgeon for the Southern Railway at Concord; a member of the State Board of Examiners; who was being taken to a sanatorium in Salisbury, N. C., in an automobile; died near Landis, June 18, from heart disease, aged 51.

James Madison Linn, M.D. Western Pennsylvania Medical College, 1902; formerly of Swissvale, Pa.; later a practitioner of Conoquenessing, Pa.; died in the West Penn Hospital, Pittsburgh, June 21, from peritonitis, a day after a surgical operation, aged 42.

Frederick A. Dietrich, M.D. Rush Medical College, 1866; New York University, New York City, 1871; Hahnemann Medical College, Chicago, 1873; a member of the Illinois State Medical Society; died at his home in Freeport, Ill., June 15, aged 76.

Matthew Philip Campbell, M.D. College of Physicians and Surgeons, 1899; a member of the Massachusetts Medical Society; of Provincetown; died in the Massachusetts General Hospital, June 21, from cerebral hemorrhage, aged 37.

William Henry Lamborn, M.D. Northwestern University, Chicago, 1902; *and later clinical assistant in medicine and demonstrator in histopathology in his alma mater; formerly a member of the Illinois State Medical Society; of Highland Park, Ill.; who had been interested in extensive farming operations in Saskatchewan for several years; died in Loreburn, Sask., June 17, from injuries received in a runaway accident, aged 40.*

William H. Parker, M.D. University of Iowa, Iowa City, 1883; of Minneapolis; for nineteen years a practitioner of Masonville, Ia.; who had been suffering from nervous disease and tuberculosis for fifteen years; died in the Minneapolis City Hospital, June 12, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, aged 50.

Thomas H. Watts, M.D. Medical College of Virginia, Richmond, 1904; a fellow of the American Medical Association and a member of the West Virginia State Medical Association; died at his home in Filbert, from the effects of a gun-shot wound of the head, believed to have been self-inflicted, with suicidal intent, June 13, aged 32.

Emmet Hall Pomeroy, M.D. University of Michigan, Ann Arbor, 1870; *a member of the Medical Society of Virginia; a resident of Bradentown, Fla.; formerly chief of the surgical staff of the Calumet and Hecla Company; died in New York City, January 22, after an operation for disease of the throat, aged 63.*

George W. Robinson, M.D. New York University, New York City, 1863; *a surgeon of volunteers throughout the Civil War; for the last thirty years retired from the practice of medicine and residing in southern California; died in a hotel in Newark, N. J., June 22, from heart disease, aged 70.*

James Lewis Watt, M.D. Long Island College Hospital, Brooklyn, 1893; a fellow of the American Medical Association and a member of the Medical Society of the State of New York; of Sherman; died in the Brooks Memorial Hospital, Dunkirk, N. Y., June 24, from gastric ulcer, aged 41.

John Howard Lever, M.D. College of Physicians and Surgeons, New York City, 1869; health officer of Flushing, L. I., for fifteen years and vice president of the Queens County Savings Bank; died suddenly at his home in Flushing, June 24, from heart disease, aged 66.

William Henry Clowminzer, M.D. Long Island College Hospital, Brooklyn, N. Y., 1891; for many years in charge of the Children's Clinic of the Brooklyn Home for Consumptives; died at his home in Brooklyn, June 21, aged 46.

John Lee Haywood, M.D. Bellevue Hospital Medical College, 1896; a fellow of the American Medical Association; of Carters Creek, Tenn.; was killed under his overturned automobile, near Columbia, June 2, aged 41.

J. E. Jones, M.D. Rush Medical College, 1871; of De Soto, Mo.; a veteran of the Civil War; treasurer of Jefferson County for twelve years and for one term coroner; died in Williamsburg, Ia., June 19, aged 67.

Theodore T. Koenig, M.D. Kentucky School of Medicine, Louisville, 1892; a retired practitioner of Portola, Cal.; died in Lane Hospital, San Francisco, May 23, aged 46.

Jackson W. Jones, M.D. Louisville (Ky.) Medical College, 1886; died at his home in East Chattanooga, Tenn., May 21, from cerebral hemorrhage, aged 58.

John Howard Morgan, M.D. New York University, New York City, 1868; a fellow of the American Medical Association and a member of the Rhode Island Medical Society; for thirty years president of the Westerly Physicians' Association; secretary and treasurer of the Washington County Medical Society; a veteran of the Civil War and a practitioner of Westerly for thirty-four years; died at the home of his daughter in West Orange, N. J., June 20, from cerebral hemorrhage, aged 68.

Lewis N. Kanagy (license, Michigan, years of practice); for more than forty years a practitioner of Charlevoix County, Mich.; was found dead in his rooms in Ellsworth, January 20, from heart disease, aged 74.

Arthur Bardwell Newman, M.D. Toledo (O.) Medical College, 1901; died at his home in Carson, N. Dak., from the effects of carbolic acid, self-administered, it is believed with suicidal intent, June 19, aged 40.

Julius C. Gebhardt, M.D. Medical College of Ohio, Cincinnati, 1881; of Hot Springs, Ark.; died in the Ozark Sanitarium in that city, June 24, from septicemia, following a slight operation on the hand, aged 58.

William Henry White, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1863; a pioneer practitioner of western Kansas; died at his home in Great Bend, May 15, from nephritis, aged 79.

Amelia Le Sueur Yoemans, M.D. University of Michigan, Ann Arbor, 1883; for sixteen years a practitioner of Winnipeg, Man.; died at her home in Calgary, Alberta, April 22, from diabetes, aged 71.

Edward Rollin Gregg, M.D. Hahnemann Medical College, Philadelphia, 1892; for twenty years a member of the surgical staff of the Homeopathic Hospital, Pittsburgh; died at his home, June 25, aged 43.

Charles Ellsworth Dutrow, M.D. Medical College of Indiana, Indianapolis, 1892; who was seriously injured in 1895, and has been an invalid ever since; died at his home in Bristol, Ind., June 20, aged 47.

Krikor A. Hagopyan, M.D. New York University, New York City, 1883; for twenty-five years a resident of Tacoma, Wash.; died in the Tacoma General Hospital, June 12, after a prolonged illness, aged 65

Herman L. Essex, M.D. Kentucky School of Medicine, Louisville, 1902; a trustee of Haw Creek Township, Bartholomew County, Ind.; died at his home in Hope, June 19, from tuberculosis, aged 39.

J. W. Patterson (license, Michigan, nineteen years of practice, 1900); a pioneer practitioner of Mecosta County; died at his home in Millbrook, June 16, from senile debility, aged 95.

Charles Hoyt, M.D. Pulte Medical College, Cincinnati, 1879; physician to the Chillicothe Emergency Hospital; died at his home in Chillicothe, Ohio, June 19, from heart disease, aged 59.

John A. Baldwin, M.D. Atlanta (Ga.) Medical College, 1859; a practitioner of Amboy, Ind., for forty years; died suddenly at his home, June 14, from cerebral hemorrhage, aged 70.

Abijah R. Van Sickle, M.D. University of Iowa, College of Homeopathic Medicine, Iowa City, 1880; died at his home in Hastings, Neb., June 20, from heart disease, aged 58.

Vincent Davis, M.D. University of Louisville, Ky., 1862; since 1866 a druggist of Louisville; died in his apartment in that city, June 20, from acute gastritis, aged 77.

Owen Benjamin Richards, M.D. Columbus (O.) Medical College, 1882; died at his home in Trenton, N. Y., April 22, from valvular heart disease, aged 75.

William H. Heck, M.D. University of Pennsylvania, Philadelphia, 1875; died at his home in Philadelphia, June 21, from angina pectoris, aged 60.

Lewis Myers McGee, M.D. Louisville (Ky.) Medical College, 1881; died at his home in Madras, Ga., May 22, from cerebral hemorrhage, aged 61.

Jonathan D. Whittaker, a practitioner since 1845; died at his home in Perrysburg, Ohio, June 12, from obstructive jaundice, aged 89.

Frederick William Meyer, M.D. Bellevue Hospital Medical College, 1884; died at his home in New York City, May 28.

Alfred Morton Allen (license, Massachusetts, years of practice); died at his home in Wilmington, May 22, aged 59.

F. M. Entrekin (license, Illinois State Board of Health, 1881); died at his home in Coffeen, Ill., about June 9.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

DIPLOSAL

Report of the Council on Pharmacy and Chemistry

Diplosal (salicyl-salicylic acid) manufactured by C. F. Boehringer and Soehne, has been marketed with the claim that it *does not* produce gastric and *other* "toxic" effects. This claim being somewhat questionable, the referee of the committee in charge of Diplosal caused a series of clinical tests to be made by Dr. John MacLachlan, Cleveland. The first series of cases showed that the claim was untenable. Diplosal produced the toxic as well as the antirheumatic effects in approximately half the dose of sodium salicylate.

These results were submitted informally, through Merck and Co., to the manufacturer, who, after some discussion, caused a similar series of tests to be made in Germany. These tests confirmed the findings of MacLachlan in so far as they also showed toxic effects contrary to the original claims; but from these tests it still appeared that the toxicity was less than that of sodium salicylate.

Dr. MacLachlan therefore extended his series to insure that his first results were not accidental, however improbable that would have been. The second series fully confirmed the first, the entire series being contained in a paper of Dr. MacLachlan which appears elsewhere in this issue.

This paper was sent to Merck and Company, who replied, in due time, that, in view of the results of the experiments conducted by Dr. MacLachlan, their principals agreed to omit from their advertising circulars the statement that it is free from all the undesirable by-effects of salicylic acid and its derivatives, and to make reference in their circulars both to Dr. MacLachlan's experiments and to those of European clinicians. As this proposition appeared fair and just, the referee recommended the acceptance of Diplosal for inclusion with New and Nonofficial Remedies. He also recommended that the report of Dr. MacLachlan be authorized for publication. These recommendations of the referee were adopted by the Council. The description of Diplosal appears in the New and Nonofficial Remedies Department of this issue, and the report of Dr. MacLachlan among the original articles.

W. A. Puckner, Secretary.

Etiology and Thyroid Treatment of Epilepsy.—Organotherapy is being tested in constantly widening fields. Boltin (*Monatsschr. f. Neurol. u. Psychiat.*, 1913, xxxiii, 119) reports a study of the literature and his own cases of epilepsy. He concludes that the disease must be a chronic intoxication from either (*a*) the intestinal canal, caused by abnormal fermentative processes or intestinal parasites; (*b*) metabolic products of albumin; (*c*) retention of salt and secondary salt intoxication; (*d*) hyperfunction of one or more glands with internal secretion, or (*e*) hypofunction of one or more of these glands. By a process of exclusion he finally decided that the cause was insufficient function of the thyroid and parathyroid glands. Treatment on the basis of the other theories was negative. He treated forty epileptics with rectal injections of fresh extract obtained by compression of these glands in cattle. Eleven cases were negative, but in these he found evidence in the history that the attacks were due to an old meningitis; eight patients showed marked mental improvement and complete cessation of attacks very soon after the treatment was begun, and all the rest showed decided improvement after periods varying from three to six months. He believes the treatment applicable in all cases of genuine epilepsy in which degeneration in the cortex and the resultant dementia have not progressed to too extreme a degree.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Maine: State House, Augusta, July 15-16. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

New Mexico: Santa Fe, July 14. Sec., Dr. W. E. Kaser, East Las Vegas.

West Virginia: Charleston, July 14-16. Sec., Dr. H. A. Barbee, Point Pleasant.

Arizona April Report

Dr. John Wix Thomas, secretary of the Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, April 7-8, 1913. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 9 of whom 5 passed and 4 failed, including one osteopath. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Drake University College of Medicine	(1908)	81.6
Harvard Medical School	(1902)	82.8
Washington University, St. Louis...(1901) 77.4;	(1912)	83.6
University of Virginia	(1890)	89.2
FAILED		
Atlanta School of Medicine	(1907)	67
Louisville Medical College	(1899)	68.5
Ensworth Medical College	(1905)	65.6

Book Notices

The Health of the Worker. Dangers to Health in the Factory and Shop and How to Avoid Them. *By* C. E. A. Winslow, Associate Professor of Biology, College of the City of New York. Paper. *Pp.* 24, *with* 12 *illustrations.* New York: Metropolitan Life Insurance Company, 1913.

The practical work of life-insurance companies for the conservation of human life and health is to be commended, although it may be said that it is not altogether altruistic. Among the measures along this line this little pamphlet should be of distinct value. Winslow tells in direct language of the dangers to health in the factory and how to avoid them. When both workman and employer thoroughly understand the value of hygienic factory conditions, the former for his own welfare and the latter from both the humanitarian and the economic points of view and requirements, their cooperation will result in the best attainable conditions. The pamphlet gives a list of the dusty and injurious trades, describes and illustrates objectionable and ideal conditions, and sets forth the sanitary standards adopted by the cloak and suit industry in New York.

The Modern Materia Medica. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Antidotes and Incompatibilities of all the Additions to the Newer Materia Medica That Are Likely to be Called for on Prescriptions, Together with the Name and Address of the Manufacturer or Proprietor, and in the Case of Foreign Articles, of the American Agent. Third Edition. Cloth, Price, $1. Pp. 282. New York: The Druggists' Circular, 1912.

As explained in a review of the second edition (The Journal, May 6, 1911, p. 1349), this book is an attempt to collect information in regard to the composition of proprietary medicines—the kind used by physicians as well as those advertised direct to the public being included—and it lists practically every medicinal product which has been introduced into medicine during the last decade. As explained before, the information contained in the book has been obtained chiefly from the advertising circulars of manufacturers. While there has been some attempt to scrutinize the manufacturers' claims and to give consideration, for instance, to the Reports of the Council on Pharmacy and Chemistry and of the Chemical Laboratory of the American Medical Association, there seems to be a disposition to accept the manufacturers' claims at their face value. For example, the claims of the manufacturer for Anusol Hemorrhoidal Suppositories are quoted, but no reference is made to the analytic report of the laboratory of the American Medical Association which showed that the suppositories were practically devoid of anusol. Likewise the manufacturers' claims for the composition of Captol are quoted, although the laboratory of the American Medical Association has shown that these claims were unwarranted. If the user will bear in mind that the statements contained in the book are in general not authoritative, but reflect merely the advertising claims for proprietaries, the book will be found a most useful reference work on proprietary medicines.

Studies in Clinical Medicine. By C. O. Hawthorne, M.D., Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow. Cloth. *Price,* 6 *shillings net. Pp.* 441, *with* 45 *illustrations.* London: John Bale, Sons & Danielsson, 1912.

This is a collection of nearly forty essays and papers on subjects relating to internal medicine, many of the articles being revisions of reprints of papers that have already appeared in medical journals. Fourteen of the chapters are concerned with clinical lectures. The articles for the most part are carefully written and the subjects gone into with great thoroughness. Such are the several articles dealing with rheumatism, rheumatoid arthritis and the retinal and other ocular symptoms of disease. The clinical lectures are instructive in that some one feature of a case is emphasized and its importance and its relation to other aspects of the disease clearly set forth. We might cite as an illustration the way in which the author approaches the subject of pernicious anemia from the point of view of edema. The style is clear and the essays make entertaining and instructive reading.

A History of Nursing, From the Earliest Times to the Present Day, with Special Reference to the Work of the Past Thirty Years. Edited and in Part Written by Lavina L. Dock, R.N., Secretary of the International Council of Nurses. In Four Volumes. Volumes 3 and 4. Illustrated. Price, $5. New York: G. Putnam's Sons, 1912.

To the two volumes which we reviewed Feb. 15, 1908, p. 549, we have the pleasure now of noting Volumes III and IV, bringing the work down to date. The progress of nursing in all countries is covered and some interesting historical contributions are given. The illustrations add to the work and make this set an important contribution to the history of medicine.

Golden Rules of Gynecology. Aphorisms, Observations and Precepts on the Proper Diagnosis and Treatment of Diseases of Women. By George B. Norberg, M.D., Gynecologist, Kansas City General Hospital. Cloth. Price, $2.25. Pp. 253. St. Louis: C. V. Mosby Company, 1913.

The purpose of this volume is to give those methods of gynecologic diagnosis and treatment which are believed to produce the best results. Lengthy dissertations have been eliminated, many subjects properly treated under general surgery are omitted and only what the author regards as the best methods of procedure have been culled from gynecologic literature.

Our Baby. A Concise and Practical Guide for the Use of Mothers in the Care and Feeding of Infants and Young Children. By Ralph Oakley Clock, Ph.B., M.S., M.D., Assistant Physician to Out-Patient Department of the Babies' Hospital of City of New York and St. Mary's Free Hospital for Children, New York City. Cloth. Price, $1.25 net. Pp. 193, with 21 illustrations. New York: D. Appleton & Co., 1912.

Although this book adds another to an already long list of books covering the same ground, Clock's work deserves commendation. It is well written and clear. It is a good book to put into the hands of mothers.

A Handbook on Surgery Intended for Dental and Junior Medical Students. By Arthur S. Underwood, M.R.C.S., L.D.S., and Bayford Underwood, M.B., B.S., L.R.C.P. Cloth. Price, $1.50 net. Pp. 244, with 19 illustrations. New York: William Wood & Co., 1913.

This is an excellent work for students and those who anticipate the practice of surgery. There are thirty chapters covering the most important points in surgery, including diseases of all the organs and structures of the body.

Miscellany

Clean Kitchens

In an article entitled "The Shame of Hotel Kitchens," André Tridon in the *International* paints a grewsome picture of conditions in the kitchens of the leading hotels of New York and other cities. Most of these kitchens are in the basement and some even in subbasements, improperly ventilated, the numerous cooks and assistants working feverishly in an intense heat ranging from 100 to 140. The conditions under which the food is prepared and handled, as described by Tridon, are extremely repulsive, and measures looking to their betterment are demanded.

In describing these conditions he says with reference to the employees: "Some of these men are of cleanly habits; some take a bath only on Saturday night; some are young and some are not so young; some are healthy; some . . . Read the report of the Factory Investigation Committee (New York) relative to basement bakeries. Every hotel has one and the kitchen is hotter than the bakery. Some of the men were found to have boils, eczema and scalp diseases; the usual proportion suffer from venereal diseases with their concomitant skin manifestations. Many of the men working in overheated rooms are subject to colds in the head and do not carry handkerchiefs. Tuberculosis is the special occupational disease of kitchen workers."

Two towels are given each cook every day to mop his brow and to wipe his hands. These same towels are used for the purpose of neatly molding the food as it appears on the serving plates, and Tridon contrasts this with the condemnation of the roller towel by hygienists. The odor that arises from the sweltering cooks is like that of the hot room in a Turkish bath or that of a menagerie. The dripping garments of the cooks at the end of the day are either hung up in the kitchen, thrown on the tables or rolled up and placed in lockers to be donned again the next morning. Some cooks change their jackets twice a week; some once a week, and as they become dirty within a short time, it is hard to tell how long a cook has been wearing the same garment. In some hotels the cooks change their clothes in the kitchen; in some dressing and undressing is done in the bakeshop.

Tridon contrasts these basement kitchens with the basement bakeries against which action has been taken in many cities by the health authorities, and says that conditions in the kitchens are much worse. In the leading hotels of New York only three exceptions are found in which the kitchens are not located in basements with no sunlight or air, but with the foulness bred of dampness, cooking-odors, heat and sweltering cooks. Among the hotels having the best-lighted, best-ventilated and cleanest kitchens is the Mills Hotel for working people, in which a bed can be had for 20 cents and a meal for 15 cents.

In many of these kitchens, food is kept on the stove or steam table in open tin cans from which vegetables have been taken. It is almost impossible to keep these cans clean. Dirt nestles securely under the jagged rim and many a finger has been cut on these cans, but, as Tridon says, "What does a drop of blood matter in a gallon of sauce." Another abomination in hotel kitchens is the "stock pot." You order beef broth, consommé, or potage; your tureen is filled from the spigot out of the "stock pot," and some flavoring is stirred into the liquid thus obtained. Once a week in summer and once a month in winter the huge "stock pot" is removed from the stove and cleaned. The "stock pot" is placed again on the fire, filled with water, and into the water there go all the odds and ends which cannot be served in or are returned from the dining-room; scraps of steak, chicken heads, soup bones—anything. It is always uncovered and on cleaning days the ooze in the bottom of the pot a foot deep, is always found to contain a few roaches and not infrequently some over-inquisitive rodent. The "stock pot" is cleaned weekly in the summer because the odor becomes unbearable by Friday night. Other insanitary conditions are described, such as water-closets without wash-bowls and ventilated through the bakeshops; kitchen garbage not removed on Sunday; men washing their hands in the sink where frozen chicken is thawing out under the hot water faucet; one single water faucet for the kitchen of a great hotel; the kitchen of a famous restaurant located under the sidewalk and badly lighted through the defective glass prisms of the sidewalk; another with a cesspool opening in front of the ice-box, where all the sewerage pipes converge. These conditions are specifically described as being present in New York hotels, but Tridon says that there is documentary evidence to show that these conditions are duplicated in all the large cities in the country.

The unfortunate feature of this matter is that, according to Tridon, there is no legislation applicable to hotel kitchens. He says that boards of health are not concerned with things which happen below the street floor. Factory laws and labor laws do not apply to hotel kitchens. Things and persons lose their usual identity or definition when they are located in hotels or restaurants, and even the State Commissioner of Health of New York is said to have declared that his department had no power to interfere. The attempt to secure laws to better these conditions have been blocked, and, in instances in which legislation has been secured to better the sânitary conditions in bakeshops, chemical factories, manufacturing lofts, etc., efforts to secure their application to hotels have been unsuccessful. The cooks realize that the conditions under which they work are inexcusable; that their employment is dangerous for their health, and also that the conditions are a menace to the public.

Tridon refers to a hospital in New York in which the kitchen is on the top floor and says that architects and builders with an ounce of brains should long before this have thought of this method of getting rid of the insanitary conditions inevitable with basement kitchens in hotels and restaurants.

Pellagra.—Here is a disease practically unknown to us a short time ago, which, in the brief space of five or six years, has been recognized in nearly all parts of our country, and which has, I believe, numbered not less than 20,000 victims with a case mortality certainly in excess of 25 per cent. It is a disease, moreover, which offers peculiar and perplexing difficulties. Sporadic here perhaps for a century, recently, and for unknown reasons, it has assumed an unwonted activity which shows no sign of abating. When consideration is given to the character of the disease; its continuous and rapid spread; its chronicity; its frequent distressing and painful manifestations; its termination at times in insanity; its grave form and high mortality; the class of people most affected; to the absence of any definite knowledge of its real nature and cause; to the fact that such knowledge as we do possess casts at least grave suspicion on a valuable food product in general use; to the absence of any trustworthy prophylaxis; to the inefficacy of therapy; to the serious and widespread fear on the part of an aroused public—when these, and other minor things, are given due consideration this question rises to the dignity of a national problem demanding the most serious attention.—Lavinder in *South. Med. Jour.*

Heredity in Its Beneficent Aspects.—Heredity is really our friend; it helps us more than it harms. The newly established science of eugenics may be described as the science of applied heredity, whereby we may hope deliberately to aid and hasten the results that are being blindly but unerringly worked out by time. Medically, heredity should never be used as a bugaboo to scare the timid with horrible prospects of inevitable misfortune. It should be present not as a demon, but as a kindly, though sometimes stern, guardian. To heredity one generation owes what is good in it; it owes to posterity the transmission of that good augmented by the same agent. Heredity is the silver cord that links the ages of man through his evolution, that leads from the slime of animalculate existence to perfections as yet unimagined.—"Medicus Peregrinus," in *Boston Medical and Surgical Journal.*

Medicolegal

Liability of Physicians and Surgeons—Test of Treatment—Definition of Malpractice—Burden of Proof—Examination which Must Be Allowed after Exhibiting Portions of Body—Evidence Barred

(*Booth vs. Andrus* (*Neb.*), *137 N. W. R. 884*)

The Supreme Court of Nebraska reverses for insufficiency of evidence and errors of law a judgment for $7,200 damages rendered in favor of the plaintiff, for alleged malpractice. The court says that the plaintiff was a married woman living with her husband, and the defendant was a practicing physician and surgeon of the eclectic school. The charges were that the defendant had negligently, and without the knowledge and consent of the plaintiff, produced an abortion, removed her appendix, ovaries, etc.

The court holds that physicians and surgeons do not impliedly warrant the recovery of the patients, and are not liable on account of any failure in that respect, unless through some default of their own duty. They are not required to possess the highest knowledge or experience, but the test is the degree of skill and diligence which other physicians in the same general neighborhood and in the same general line of practice ordinarily have and practice. When they accept professional employment they are bound only to exercise the reasonable care and skill which are usually exercised by physicians or surgeons in good standing in the same school of practice. And where any person claims a cause of action for neglect to exercise the required degree of care or skill, the burden is on him to prove such neglect. In other words, in an action for malpractice, a physician or surgeon is entitled to have his treatment of a patient tested by the rules and general course of practice of the school of medicine to which he belongs.

The trial court defined "malpractice" as "the bad professional treatment of disease, pregnancy or bodily injury, from reprehensible ignorance or with criminal intent." As an abstract legal proposition, or if based on pleadings charging "reprehensible ignorance" or "criminal intent," the instructions would be correct; but a trial court has no right to state in its instructions to the jury an abstract legal proposition that is outside of the issues. In this case neither "reprehensible ignorance" nor "criminal intent" was charged. The charge was negligence and the court would have been more accurate if it had told the jury that "malpractice," within the issues tendered by the pleadings in this case, meant the negligent performance of the surgical operations set out, or the bad professional treatment of the plaintiff immediately preceding or subsequent to the performance of such operations. There was enough in the case already to inflame the average jury without the introduction by the court of the questions of reprehensible ignorance and criminal intent. The court should therefore have carefully guarded this important definition in its instructions.

Again, the trial court told the jury that it was the duty of the plaintiff as a patient to follow the instructions prescribed by the physician and surgeon, and that, if she did not follow the reasonable instructions of the defendant, then the defendant was not liable for damages resulting from such disregard of her duty. That instruction correctly stated the law. But it was followed by an instruction that in so far as testimony had been introduced tending to show that the plaintiff did not submit to all of the treatment prescribed by the defendant for her, and recommended in her case, that the burden of proof was on the defendant to show prescriptions were proper and adapted to the end in view. This latter instruction shifted the burden of proof and placed it on the defendant, and thereby conflicted with the first instruction, which properly placed the burden. In an action for damages against a licensed physician the presumption is that the defendant performed his duty to the plaintiff; that he correctly prescribed for his patient; and, when the contrary is alleged, the burden in every such case is on the plaintiff to establish his allegation. In such cases, as in all other cases where the burden of establishing his case is on the plaintiff, that burden does not shift, but continues throughout the trial.

While the plaintiff was on the witness stand, her counsel had her leave the witness stand and recline on the counsel table, and, with the assistance of a nurse, arrange herself on the table so as to exhibit her right breast and her right leg from the hip to the ankle. The jury were then permitted to leave the jury box and pass around the table to view the portions of the plaintiff's body exposed. After that it was error for the court to deny the request of the defendant to appoint physicians and surgeons of the same school as the defendant to examine the same parts which had been introduced in evidence by the plaintiff. That is to say, where, during the trial of an action against a surgeon for damages for malpractice, the plaintiff voluntarily submits a portion of her body to the inspection of the court and jury, it is error for the court to refuse to permit an examination, by a limited number of reputable surgeons of the defendant's selection and school, of that portion of the body so exhibited. And where, in such an action, the claim is single, and is based on two separate operations on the same day, on two different portions of the plaintiff's body, if the plaintiff voluntarily submits to the inspection of the court and jury that portion of her body on which one of such operations was performed, *it is error for the court to refuse to permit an examination*, by a limited number of reputable surgeons of the defendant's selection and school, of the other portion of the body on which the other operation was performed. But the fact that the plaintiff voluntarily exhibits certain parts of her body, involved in the action, does not give the defendant a right to examine other parts, not involved.

In an action for damages against a surgeon for malpractice, where the allegations and prayer of the petition are based solely on the defendant's alleged negligence and want of care in the performance of certain surgical operations and in the administration of medicines in connection therewith, at the plaintiff's home and in the defendant's hospital, it is prejudicial error for the court to permit the plaintiff to testify that, at another time and place, during the several months' interim between such operations, the defendant made an indecent proposal to her.

Privilege Not Waived by Answers on Cross-Examination—Admissibility of Physician's Testimony as to Sanity

(*Larson vs. State* (*Neb.*), *137 N. W. R. 894*)

The Supreme Court of Nebraska holds that the defendant in a homicide case by answering without objection questions of the prosecuting attorney on cross-examination relating to his treatment by his physician and the physician's opinion of his condition, does not waive his privilege to object that the physician cannot as a witness for the state testify to confidential communications between them. The court says that some decisions were cited which appear to hold, as maintained by Professor Wigmore, that, if the person entitled to the privilege introduces evidence in regard to his physical condition at the time, it is competent to call his physician to rebut that testimony. But he appears to derive his conclusions from his reasoning and not from the language of the statute. He is discussing what the statute ought to be and not what it really is. The provision of the Nebraska code that "no . . . physician . . . shall be allowed in any testimony to disclose any confidential communication" appears to be absolute, and it is doubtful whether the next section, which provides that this privilege shall not obtain where the party "waives the right thereby conferred," was intended to prevent a party from testifying to his physical condition, without at the same time consenting that his physician may at any time reveal his confidential communications. The question is an important one and is a question of construction of the intention of the legislature. If it is wise to introduce such an innovation into the law, it would seem to be the province of the legislature to do so. However, the ground on which this waiver in this case was urged by the state was a little different from that stated by Mr. Wigmore, and perhaps a little more substantial. It was said that the defendant himself gave testimony of his physician's examination and treatment. If the defendant had offered these matters as evidence in his own behalf, the position of the state that he had waived this privilege would be unassailable. He did not, however, do so. These matters were drawn from him by the state's attorney on cross-examination and only in answer to direct questions. It seems clear that the state ought not to be allowed to compel the witness to waive his privilege in this manner. It was said that the witness was not compelled to answer these questions, but might then have insisted on his privilege; but this suggestion does not answer the objection. If the defendant's privilege would extend so far as to exempt him from cross-examination as to conversations and transactions he had had with others, including his physician, the state ought not now to be allowed to urge that fact after having introduced the evidence which assumed that the defendant was compelled to answer.

The court furthermore leaves it an open question whether a physician and surgeon, who has treated the defendant in his professional capacity on various occasions for several years and has also seen and conversed with him occasionally unprofessionally, and who testifies that he can give his opinion as to the defendant's sanity based solely on his knowledge of him derived unprofessionally, can be allowed to state that opinion when objected to by the defendant on the ground of privilege under the statute.

But if an expert witness fails to testify to the facts and conditions which he has observed on which to form an opinion as to the sanity or insanity of the defendant, or that what he had observed was sufficient to enable him to form an expert opinion, it is erroneous to allow him to testify that he has not observed anything that led him to the conclusion that the defendant was insane.

Case Cited Authorizing Action for Deceit

(Flaherty vs. Till (Minn.), 137 N. W. R. 815)

The Supreme Court of Minnesota affirms an order overruling the general demurrer of the defendant to a complaint in an action for deceit. The court says that the complaint, while not a model pleading, alleged, in effect, that the plaintiff, on a certain date, was suffering from irritation of his stomach, and applied to the defendant for advice and treatment, which he undertook to give. Thereupon the defendant, for the purpose of deceiving the plaintiff, falsely and fraudulently made a pretended diagnosis of his condition, and advised him that he was suffering from rheumatism of the stomach, and that the proper and necessary treatment therefor was to cover a large portion of his body with a plaster, which the plaintiff is now advised consisted of olive, amber and kerosene oils. The defendant also represented as of his own knowledge to the plaintiff that such treatment would have no injurious effect on his health, but that it would cure the ailments from which he was then suffering. The defendant at the time of making such representations knew each of them to be false, and made them for the purpose of deceiving the plaintiff and inducing him to submit to the treatment and thereby get his money. The plaintiff believed and relied on the false representations, and submitted to the proposed treatment, which did not cure him, but, on the contrary, injured his health and severely blistered his body, causing poisonous sores and ulcers thereon, to his damage in the sum of $10,000. Where one deliberately makes a false representation of a material fact, or as of his own knowledge without knowing whether it is true or false, intending that another shall act on it, and he does so to his injury, an action for deceit lies. The injury to one's person by the fraud of another is quite as serious as an injury to his pocketbook. Testing the allegations of the complaint by the rule stated, and construing them liberally, but without applause, the court is of the opinion, and so holds, that they state facts sufficient to constitute a cause of action.

Society Proceedings

COMING MEETINGS

Washington State Medical Association, Everett, July 14.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting Held April 23, 1913

The President, Dr. Charles A. E. Codman, in the Chair

Marked Arthritis Deformans Greatly Improved by Physical Means

Dr. A. B. Hirsh: My patient has been through the usual course of treatment and has gone the round of the different spas without benefit. She was very much bent and was obliged to use a cane in walking. The treatment has been by electrical methods alone, the static and high-frequency coil currents. Bacterial infection was excluded by the laboratory examinations, and the condition resolved itself into one of long-continued absorption of toxins from the roots of abscessed teeth. The case shows the value of long-continued physical treatment in those cases otherwise almost impossible of relief.

A Modern Extraperitoneal Cesarean Section and the Best Technic for Its Performance

Dr. Barton Cooke Hirst: An incision large enough to permit the extraction of the child's head is made below the umbilicus. After making the incisions in the two layers of the peritoneum they are sutured together, which immediately closes the peritoneal cavity, making the operation extraperitoneal. Then follows the incision in the uterine wall made in the ordinary way, and the extraction of the child's head with forceps. The lower uterine segment is sutured with double catgut and the abdominal wall closed in the usual way. It has been found to increase hemorrhage if the placenta is delivered from the uterine wound. It is rather better to clip the cord off, drop it into the uterus, suture the uterus and deliver as usual. If the woman is not in labor, it is necessary to extract the placenta through the uterine wound.

DISCUSSION

Dr. John B. Deaver: The fact that Dr. Hirst is one of the two men who have performed this operation in this country and that he has done nine of the ten operations performed speaks for itself from the point of view of experience. It always appeals to me as good surgery to deal with the condition extraperitoneally. By Dr. Hirst's technic, it seems to me, there may be, perhaps, a little greater danger to the life of the child.

Dr. George M. Boyd: The lowered mortality in cesarean section has led some of our American surgeons to resort to the extraperitoneal operation. I believe that cesarean section is a child-saving operation.

Dr. William R. Nicholson: I have witnessed two-thirds of the operations which Dr. Hirst has performed by this technic. Within five years, I believe, there will be a larger percentage of men doing this operation in selected cases. Statistics do not prove that the true extraperitoneal technic is any better than the transperitoneal method. Dr. Hirst has used a continuous stitch which seems to be absolutely tight. The true extraperitoneal method has not a point of any advantage. If the case is septic, the patient will die just as readily no matter which technic is employed. The general obstetric operator who has not the facilities for becoming especially expert in technic I believe will do better to adhere to the intraperitoneal route.

Dr. E. E. Montgomery: Without question this is an operation which is preferable to the method known as the pure extraperitoneal. Every operation must be judged by its mortality, morbidity and the conditions in the event of subsequent pregnancy. Statistics indicate that there is not a great demand for an extraperitoneal operation in the ordinary case when there is no reason to suspect infection.

Dr. Edward P. Davis: Dr. Hirst's description of this technic is interesting, but the operation is not the extraperitoneal section that I have seen. I welcome, however, most heartily this method of delivery through a peritoneal fistula. I should like to know what Dr. Hirst would do in cases of sepsis. I should not like to employ this method in the presence of hemorrhage or in cases in which I had doubts as to the condition of the uterine muscle.

Dr. J. L. Forwood, Chester: I have done cesarean section forty-two time in ten years. My operations have been intraperitoneal. A vertical incision is made through the abdominal walls in the usual way. I formerly made the incision large enough to lift the uterus out and then opened the uterus and delivered. Now I operate by cutting through the anterior surface of the uterus an opening only large enough to deliver the child. Hemorrhage has been controlled by the uterine arteries being held by an assistant placing a hand on either side. I do not cut low down in the lower segment, for I believe that much of the hemorrhage comes from the fundus of the uterus. When the uterus has been sutured, ergot is given hypodermically. In three of the forty-two cases, instruments had been applied and there was infection. I operated on one woman four times, on three other women twice.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Annals of Otology, Rhinology and Laryngology, St. Louis

March, XXII, No. 1, pp. 1-272

1 Present Status of Otosclerosis. A. Denker, Halle.

2 Report of Examination of Both Temporal Bones from 120 Individuals in Reference to Question of Symmetry in Health and Disease. A. Cheatle, London.

3 Case of Bronchoscopy for Multiple Foreign Bodies (Almond Shell and Pulp) in Child Two Years of Age, with Observations on Bronchoscopy in Infants and Young Children. J. R. Winslow, Baltimore.

4 Tumors of Larynx. R. Levy, Denver, Colo.

5 Acute Suppuration of Middle Ear—Its Neglect and Proper Treatment. G. Alexander, Vienna.

6 Pneumococcus Infections of Nose and Throat. C. F. Theisen, Albany, N. Y.

7 Two Cases of Air Embolus following Exploratory Puncture of Antrum of Highmore. H. M. Bowen, Toronto.

8 Nasal Hemorrhage following Turbinectomy in Hemophiliac Treated by Injection of Human Blood-Serum. L. Emerson, Orange, N. J.

9 Function of Tonsils. L. M. Freedman, Boston.

10 Submucous Resection of Nasal Septum in Semirecumbent Position. W. R. Butt, Philadelphia.

11 Treatment of Deafness by Reeducating the Hearing. Maurice, Paris, France.

Archives of Diagnosis, New York

April, VI, No. 2, pp. 101-200

12 Chronic Appendicitis vs Duodenal Ulcer and Their Association. J. B. Deaver, Philadelphia.

13 *Auscultation at Acromion Process: Its Significance in Apical Disease. R. Abrahams, New York.

14 Lymphuria and Its Clinical Status. H. Stern, New York.

15 Difficulties in Early Recognition of Certain Diseases of Pancreas. J. A. Lichty, Pittsburgh.

16 Simulation by Malaria of Acute Surgical Abdominal Disease, Especially Appendicitis. W. M. Brickner, New York.

17 Surgical Aspects of Gall-Bladder Dyspepsia. R. H. Fowler, Brooklyn.

18 Parapsoriasis; Its Relations to Psoriasis, Eczema and Seborrhea. W. S. Gottheil, New York.

19 Prevention and Treatment of Cancer of Skin. M. F. Engman and R. Buhman, St. Louis.

20 Diagnostic Features of Nasal and Otitic Manifestations of Influenza. S. Oppenheimer, New York.

21 Indigotin Color Test for Indican. R. T. Edes, Reading, Mass.

22 Electro-Cardiophone: New Apparatus for Controlling Heart and Heart-Sound Tracing. S. Lilienstein, Bad Nauheim, Germany.

13. **Acromion Process Auscultation.**—Abrahams has studied auscultation at the acromion process, or, to be anatomically accurate, the acromion ends of the clavicles, for more than three years and has come to the conclusion that the subject deserves a place in physical diagnosis. The mode of procedure is very simple: the bell of the stethoscope is placed over the acromion end of the clavicle and is adjusted in a way that there is perfect adaptation between instrument and bone. Frequently, in order to ensure perfect adaptation, it is necessary to cover the acromion process of the scapula as well as the acromion end of the clavicle. This done, the patient is told to breathe, count, whisper or cough, whichever sign one is endeavoring to bring out. In listening to these processes, Abrahams says, it is important to remember the physiologic auscultatory differences between the right and the left apices. The right apex is characterized by bronchovesicular breathing; distinct spoken voice and clear whispered sound. The left apex is characterized by vesicular breathing; indistinct spoken voice and muffled whispered sound. When the apices are perfectly healthy, auscultation at the acromion ends of the clavicles strikingly emphasizes their respective physiologic differences. An exception to this rule is found, once in a while, in auscultating the acromion end of the left clavicle. This consists in a reversal of the vesicular murmur, inasmuch as the expiratory sound is found louder, more pronounced than the inspiratory sound.

When the apices are diseased the following is to be observed: (1) Right apex. In the case of a very early infiltration of this apex, auscultation at the acromion process will yield an appreciable, prolonged expiratory sound; a louder spoken voice and a slightly increased whispered sound. These acoustic changes may not at all be heard through direct auscultation over the apex. In other words, the acromion process may be the first to send the storm signal of the apical disease when it is properly auscultated. First stage tuberculosis of the right apex will reveal through auscultation of the acromion end of the clavicle tubular breathing, bronchophony and whispered pectoriloquy—signs which when found over lung tissue would indicate absolute consolidation. In other words, the usual acoustic phenomena which are, or should be, apparent in the first stage of tuberculosis of the apex are greatly exaggerated and made unmistakably evident when the outer bony process of the right clavicle is auscultated. (2) Left apex. In incipiency of the left apex, breathing conducted through the acromion end of the clavicle becomes pronounced bronchovesicular and an increase in voice and whispered sound becomes marked and notable, while the same changes are with difficulty perceived by auscultating the apex itself. When the infiltration reaches a fair degree of advancement, like unto the first stage, breathing heard at the acromion process assumes a tubular character; the voice changes into bronchophony and the whispered sound sounds like pectoriloquy. The same signs, under the same condition of the apex, will be found over the apex, but not nearly so clear, demonstrable and pathognomonic. These findings are so fairly common and so typically tell-tale, that often Abrahams begins auscultation of the apices at the acromion processes.

Archives of Pediatrics, New York

May, XXX, No. 5, pp. 321-400

23 Chronic Infective Endocarditis. E. Cautley, London.

24 Diphtheritic Paralysis. J. D. Rolleston, London.

25 *Present-Day Opinions of Value of So-Called Inclusion Bodies in Scarlet Fever. M. Nicoll, New York.

26 *Treatment of Scarlet Fever with Intravenous Injections of Neosalvarsan. L. Fischer, New York.

27 Result of Recent Researches into Etiology of Measles. J. S. Leopold, New York.

28 *Return Cases of Scarlet Fever. L. A. Sexton, New York.

29 Plea for More Frequent Use of Rhachiocentesis. E. J. Wynkoop, Syracuse, N. Y.

25. **Value of So-Called Inclusion Bodies.**—The findings of typical inclusion bodies in a case resembling scarlet fever before the fourth day of the disease, Nicoll says, may mean scarlet fever, sepsis or severe streptococcal angina. Negative finding practically excludes the existence of scarlet fever. In the course of diphtheria, for which antitoxin has been given, positive findings before the seventh day are not diagnostic of scarlet fever. After this time a positive finding in the case of a scarlatiniform rash should make one suspect very

strongly the existence of a complicating scarlet fever. There is at present no short-cut to the diagnosis of scarlet fever. All the clinical symptoms and signs must be taken into consideration in reaching a conclusion, and among them the determination of the presence or absence of inclusion bodies in the blood has a not unimportant place.

26. **Treatment of Scarlet Fever.**—Fischer's investigations cover a series of five cases. All the cases chosen were septic, and were selected because the prognosis was fatal. In all five cases reported a Wassermann examination was made. Three of these proved negative, one probably positive, one reaction unreported. All injections were given intravenously. In young infants the size of the median basilic vein was so small that it was necessary to cut down and expose the vein at the elbow to introduce the remedy in these cases. The jugular vein used in one case offered the best means of introducing the remedy, owing to its size and accessibility. The dose employed was 0.2 gram dissolved in 40 c.c. of plain sterile water. No reaction, such as an acute febrile attack, nor shock, nor rash followed the injection. Fischer says it is too early to be prejudiced for or against neosalvarsan in septic scarlet fever, but it merits an extensive trial.

28. **Return Cases of Scarlet Fever.**—Sexton claims that so long as nasal and aural discharges exist just so long will cases of scarlet fever be infective.

Boston Medical and Surgical Journal

June 26, CLXVIII, No. 26, pp. 941-972

30 Popular Medical Education. M. W. Pearson, Ware, Mass.
31 *Cerebral Complications in Pneumonia. C. F. Withington, Boston.
32 Do Results Justify Use of Phylacogens? Report of Forty Cases. C. R. Metcalf, Concord, N. H.
33 *Bulbar Paralysis in Typhoid. R. Fitz, F. G. Brigham and J. J. Minot, Boston.

31. **Cerebral Complications in Pneumonia.**—Withington emphasizes the fact that it is important to recognize, clinically, that in a few cases cerebral symptoms may complicate pneumonia which may be, on the one hand, either those of grave organic lesion, of which the commonest is meningitis, or, on the other hand, of apparently toxic origin with little or no destruction of brain tissue. The enormous importance from the point of prognosis of this distinction is evident, but difficulty in diagnosis is sometimes insuperable. Lumbar puncture is of importance in excluding meningitis, though it is not an unfailing criterion. Examination of the fundus may be useful. Cases of encephalitis are not always to be distinguished from the functional cases, and it is possible that many cases of hemorrhagic encephalitis may recover. The prognosis, if one be assured of the inorganic toxic character of the disease, would be on the whole favorable, though it is not as roseate as is indicated by some authorities. The occurrence of the symptoms in a young healthy person is more suggestive of a toxic functional character than would be the case in aged people. The toxema is productive of diverse symptoms according as its incidence is on the central or the peripheral nervous system.

33. **Bulbar Paralysis in Typhoid.**—A well developed man, previously in good health, was seized suddenly with fever accompanied by difficulty in swallowing and weakness of the legs. He died eight days after the onset of his illness with symptoms suggesting bulbar paralysis and an increasing paralysis of areas supplied by spinal, as well as cranial nerves. The course of the paralysis was not typically ascending or descending, but diffuse, suggesting a rapid involvement of one nerve area after another.

A necropsy was made 56¾ hours after death. The following noteworthy features were recorded: The meninges, vessels of the circle of Willis, the sinuses and middle ears on section are not remarkable. The brain weighs 1,385 gm. Section of tissue from the hemispheres and brain stem shows nothing to record. The upper end of the cervical portion of the cord is not remarkable. The small intestines to the region of the ileum are negative. The mucosa in this area shows scattered smaller and larger grayish elevated plaque-like masses of roughly round to oval shape and rather firm. Some of these have a flat button-like appearance. There is hyperplasia of the mesenteric lymph glands and of the spleen. Cultures from the spleen show many colonies of Gram decolorizing non-gas producing motile bacilli morphologically like typhoid, and giving a positive agglutination reaction against an antityphoid serum diluted 1-100. The anatomic diagnosis of typhoid fever, therefore, was made, the clinical picture being that of an acute bulbar paralysis.

Bulletin of Lying-In Hospital of City of New York

June, IX, No. 2, pp. 67-149

34 *Serodiagnosis of Pregnancy by Dialysation Method. C. F. Jellinghaus and J. R. Losee, New York.
35 *Thyroid in Pregnancy. J. W. Markoe and L. W. Wing, New York.
36 Further Observations on Birth Fractures. E. D. Truesdell, New York.
37 Rôle of Ovarian Disease in Production of Sterility. G. W. Kosmak, New York.
38 Some Common Mistakes in Feeding Infants. E. L. Coolidge, New York.
39 Practitioner as Obstetrician. J. W. Markoe, New York.
40 Massive Infraperitoneal Hematoma of Pelvis. J. A. Harrar, New York.
41 Diagnosis and Treatment of Eclampsia. G. W. Kosmak, New York.

34. **Serodiagnosis of Pregnancy.**—Jellinghaus and Losee prefer to call the Abderhalden test a test for the presence or absence of chorionic epithelium still capable of being washed into the general circulation. It is therefore not always useful as an aid in diagnosing an ectopic pregnancy, for if the ectopic had been followed by a tubal abortion and hematocele, the test would not necessarily give a positive reaction even though Abderhalden's claims are a fact. If the reaction were positive it would not aid us in differentiating between an early intra-uterine pregnancy with diseased adnexa and an extra-uterine. If Abderhalden's claim is a fact the test may be useful in the following: (*a*) Diagnosing early pregnancy, especially in single women in whom an examination is refused. (*b*) Differentiating between uterine myomas and pregnancy. (*c*) In diagnosing chorio-epithelioma. (*d*) In diagnosing or excluding pregnancy in nursing women with amenorrhea. (*e*) In differentiating between pregnancy and other causes of amenorrhea (change of climate, tuberculosis, diabetes). (*f*) In differentiating between pregnancy and menopause in women with an enlarged uterus due to metritis. (*g*) That it opens a field for diagnosis in other diseases in which ferments are formed. (*h*) It offers a possible method for obtaining further information about the toxemias of pregnancy.

35. **Thyroid in Pregnancy.**—Markoe and Wing observed 1,586 cases of pregnancy, 852 primiparae, showing 83 cases of thyroid enlargement or 9.7 per cent., and 734 multiparae showing 49 cases or 6.7 per cent. In all, 132 goiters were found in 1,586 cases giving a general average of 8.3 per cent. In eleven cases a family history of goiter was obtained. In eight cases varying degrees of hyperthyroidism were present; in two others it also probably existed in a mild degree. With one exception the symptoms of hyperthyroidism practically disappeared within two weeks post partum, and in this one case they were diminished, later becoming more severe with the beginning of another pregnancy. The time of onset of the goiters showed considerable variation. In the eighty-three goiters occurring in primiparae, twenty began before pregnancy; of these, eleven appeared in childhood, four at the time of beginning menstruation, and five between menstruation and pregnancy. Twenty cases are positively known to have begun during the first pregnancy. In forty-three cases seen near term, enlarged thyroids were found which had not been noticed previously by the patients—probably a majority of these began during the pregnancy. In fifteen cases there was a diminution in the size of the thyroid within two weeks post partum, as determined by a decrease in the circumference of the neck over the goiter of from 1 to 2.5 cm. The remaining cases showed no appreciable change, except that one case showed a slight increase in size.

In forty-nine goiters occurring in multiparae, thirteen began before pregnancy; of these four appeared in childhood, five at the time menstruation began and four between the onset of menstruation and pregnancy. Seventeen of these goiters are definitely known to have begun during a pregnancy. In nineteen cases the time of onset of the goiter could not be definitely determined, being found in cases near term and having escaped the notice of the patients. In the forty-nine goiters, six cases showed some diminution in the size of the thyroid within two weeks post partum. From the standpoint of the management of pregnant cases showing thyroid enlargement with or without hyperthyroidism, the following general indications seem to the authors important: 1. Improvement of hygienic surroundings and open-air treatment. 2. Avoidance of nervous strain and worry. 3. Maximum of sleep and rest. 4. Simple diet and regulation of the bowels. 5. Tonic medication. 6. In some cases administration of iodin, usually in the form of the syrup of hydriodic acid. Where the symptoms of hyperthyroidism are present in any degree of severity, the patient should have absolute rest in bed. In the earlier months of pregnancy, if severe symptoms arise, it is justifiable to terminate the pregnancy or possibly operate on the gland itself. In the authors' ten cases showing hyperthyroidism none was at any time so severe as to make the patient's condition seem dangerous, although one case had a premature delivery at six and a half months, due to a rather sudden increase in the symptoms of hyperthyroidism. It has been the authors' experience, as well as that of other observers, that the symptoms of hyperthyroidism developing during pregnancy usually greatly diminish after confinement and if succeeding pregnancies occur, the symptoms are less likely to be severe.

Cleveland Medical Journal

May, XII, No. 5, pp. 321-392

42 Total Congenital Absence of Femur (Phocomelie). J. J. Thomas, Cleveland.
43 Fetal Abnormality Complicating Delivery. D. S. Hanson, Cleveland.
44 Tumors of Cerebellopontine Angle. A. W. Luecke, Cleveland.
45 Thymus and Other Ductless Glands. R. Park, Buffalo, N. Y.
46 *Roentgenotherapy of Thymus Hypertrophy. C. W. Wyckoff, Cleveland.
47 *Serotherapy of Meningococcus Arthritis. H. L. Taylor, Cleveland.
48 Washings from Autopsy Table as Possible Source of Spread of Disease. W. D. Fullerton, Cleveland.
49 Acute Suppurative Otitis Media due to Bacillus Typhosus. J. J. Thomas and D. A. Prendergast, Cleveland.

46. **Thymus Hypertrophy.**—The Roentgen ray properly used seems to Wyckoff to be the most efficient means we have of treating enlarged thymus with symptoms of thymic asthma, and no harmful results have as yet appeared. The severity of symptoms must regulate the number of exposures. A short, strong exposure of five to eight minutes will accomplish the same results and without danger as fifteen to twenty minutes weak exposure. Not only does relief from symptoms follow, but there is a marked improvement in the general condition of the child. The diagnosis of enlarged thymus depends chiefly on the symptoms, the radiograph and the result of roentgenization. Physical findings cannot be relied on.

47. **Meningococcus Arthritis.**—Taylor reports a case of a suppurating joint entirely subsiding with the complete restoration of function under the use of a specific bacteriolytic serum.

Colorado Medicine, Denver

June, X, No. 6, pp. 175-203

50 Bullet Wounds of Liver with Report of Case. H. Freudenberger, Grand Junction.
51 Complications of Typhoid and Later Day Treatment of Same with Report of Case. F. W. Kenney, Denver.
52 Treatment of Acute Pneumonia. J. N. Hall, Denver.
53 Surgical Complications of Lobar Pneumonia and Their Treatment. C. N. Needham, Grand Junction.
54 Treatment of Gunshot Wounds of Chest. A. L. Burnett, Silverton.
55 Pathologic Function of Lipoids. E. C. Hill, Denver.

Delaware State Medical Journal, Wilmington

May, IV, No. 6, pp. 1-26

56 Some Unusual Fractures: Their Diagnosis and Treatment. W. H. Speer, Wilmington.

Georgia Medical Association Journal, Augusta

June, III, No. 2, pp. 37-72

57 Leprosy. H. Byrd, Jacksonville, Fla.
58 Public Health Service and Pellagra. R. M. Grimm, Savannah.
59 Detection of Added Water in Milk by Means of Immersion Refractometer. V. V. H. Bassett, Savannah.
60 Direct Diagnosis of Diphtheria by Bacterioscopic Methods. J. Van De Vrede, Savannah.
61 Work of Federal Pure Food Law and Its Relation to Public Health. L. Patton, Savannah.
62 Practice of Medicine and Pharmacy in Georgia and Problems Involved. R. C. Wilson, Savannah.

Illinois Medical Journal, Springfield

June, XXIII, No. 6, pp. 595-704

63 Lifting the Mantle of Reserve. L. H. A. Nickerson, Quincy.
64 Bacteriologic Research in Its Relations to Genito-Urinary Surgery. G. F. Lydston, Chicago.
65 Personal Cleanliness as Factor in Public Health. A. Gehrmann, Chicago.
66 Delayed Development of Speech in Young Children. E. L. Kenyon, Chicago.
67 Advisability of Sending Tuberculosis Patients West. D. A. Vanderhoof, Colorado Springs, Colo.
68 Care of Far Advanced Tuberculosis Patients. E. A. Gray, Chicago.
69 Present Status of Tuberculin and Its Therapeutic Limitations. J. Ritter, Chicago.
70 Arteriosclerosis. T. Tieken, Chicago.
71 One Case of Ascites with Differential Diagnosis. R. H. Smith, Seaton.

Indiana State Medical Association Journal, Ft. Wayne

June, VI, No. 6, pp. 255-306

72 Antityphoid Vaccination. W. Shimer, Indianapolis.
73 Question of Abdominal Drainage. J. H. Weinstein, Terre Haute.
74 Some Indications for Craniotrypesis. S. J. Young, Indianapolis.
75 *Vaccine Therapy in Catarrhal Conditions. D. W. Stevenson, Richmond.
76 Unilateral Mydriasis. L. D. Brose, Evansville.
77 Hernia in Infancy and Childhood. D. Ross, Indianapolis.
78 Sporotrichosis; Report of Case. B. W. Rhamy and W. W. Carey, Fort Wayne.

75. **Vaccine in Catarrh.**—As tuberculin is such a powerful proteid poison, Stevenson believes it would be well in many cases to commence its use by taking it first by mouth. He has found that it can be carried to a dose that may be one thousand times as strong as it would be safe to use subcutaneously. He has the patient brush his teeth every morning and the dose of tuberculin is largely absorbed in the mouth. From there it probably passes directly into the lymphatic system. One man who had tuberculous laryngitis was apparently cured by this method, likewise two brothers with tuberculous suppurative otitis media. Excellent results have also been obtained in tuberculous chorioiditis. With the use of a catarrhal vaccine, at least 70 per cent. of Stevenson's patients had remarkable relief which could not have been obtained under other treatment. Acute coryza, chronic rhinitis with sinus involvements and extension to the trachea and bronchial tubes, tonsillitis and mastoid inflammations were often favorably controlled. There were no signs of hypersensitiveness created as vaccines are free from the disturbances caused by serum anaphylaxis. It is especially useful in nasal infection with asthmatic complication. He has had several cases entirely relieved.

Iowa State Medical Society Journal, Clinton

June, II, No. 12, pp. 849-928

79 Differential Diagnosis of Diseases of Upper Abdominal Quadrants. C. P. Howard, Iowa City.
80 Borderline Between Ophthalmology and General Medicine. H. B. Gratiot, Dubuque.
81 Eclampsia and Post Eclamptic Psychosis with Report of Two Cases. I. N. Crow, Marengo.
82 Pathogenesis, Diagnosis and Treatment of Acute Nephritis. J. R. Allen, Waterloo.
83 General Management of Heart Lesions. F. S. Clarke, Le Mars.

Journal-Lancet, Minneapolis

June 15, XXXIII, No. 12, pp. 327-358

84 Pathology of Ovum, with Report of Three Cases. F. L. Adair, Minneapolis.
85 Influence of Nasal Accessory Sinus Disease on Eye. J. G. Parsons, Sioux Falls, S. D.
86 Membranous Pericolitis. A. A. Law, Minneapolis.
87 Idem. A. N. Collins, Duluth, Minn.

Journal of Cutaneous Diseases, New York

June, XXXI, No. 6, pp. 377-456

88 Morphea-Like Epithelioma. M. L. Heidingsfeld, Cincinnati.
89 *Verruga Peruana: Its Comparative Histologic Study in Man and Ape. H. N. Cole, Cleveland.
90 Negative Wassermann Reaction in Untreated Tertiary Syphilis of Skin and Mucous Membranes. O. H. Foerster, Milwaukee.
91 Sudden Swelling of Parotid Following Shortly After Roentgenotherapy: Its Probable Cause and Means of Prevention. G. E. Pfahler, Philadelphia.

89. **Verruga Peruana.**—In a case of verruga peruana (eruption de Carrion), studied by Cole, with successful transference to the third generation in apes, none of the organisms mentioned as specific for the disease have been found. The tumors from both the patient and the apes resemble each other very closely in the gross and in their mode of formation and in their constituents. The tumors are granulomatous in type; they are caused by some unknown organism, probably circulating in the blood and causing an inflammation and obstruction of the lymph-channels, along with subacute, inflammatory changes and necrosis. As the other granulomas—tuberculosis, syphilis, sporotrichosis, actinomycosis, etc.—have their own significant histologic changes, so also does verruga peruana, belonging to the same class, have its own characteristic microscopic picture. It is characterized by a dilatation of the lymph-vessels and a choking of their lumina with mono- and polymorphonuclear leukocytes; also by an infiltration around these vessels of plasma cells, fibroblasts, mononuclear leukocytes and relatively small numbers of polymorphonuclear leukocytes. It is further characterized by the formation and dilatation of a great number of blood-capillaries and by an extravasation of much serum and many red blood-cells into the tissues. The lymph-vessels either rupture at an early stage or dilate to large dimensions when their cellular contents undergo a pycnotic degeneration and hyalin change, with destruction of the vessel and invasion of the mass by plasma cells and fibroblasts.

Journal of Nervous and Mental Disease, Lancaster, Pa.

June, XL, No. 6, pp. 361-422

92 Case of Alzheimer's Disease with Unusual Neurologic Disturbances. A. M. Barrett, Ann Arbor, Mich.
93 Presenile Psychoses. W. L. Treadway, Jacksonville, Ill.

Kansas Medical Society Journal, Kansas City

June, XIII, No. 6, pp. 225-264

94 Some Cases of Brain Surgery in Country Doctor's Practice. E. E. Liggett, Oswego.
95 Social Activities in Third District. H. B. Caffey, Pittsburg.
96 Surgical Situation in Kansas from General Practitioners' Standpoint. T. A. Jones, Liberal.

Kentucky Medical Journal, Bowling Green

June 15, XI, No. 12, pp. 505-528

97 *Accidental Heart Murmurs. F. C. Askenstedt, Louisville.
98 Surgical Treatment of Pyosalpinx. S. Anderson, Louisville.
99 Suppurative Otitis Media. J. R. Wright, Louisville.
100 Anal Pruritus Treated by Operation; Report of Case. G. S. Hanes, Louisville.
101 Tuberculosis: Sanatorium Treatment. E. L. Pirkey, Louisville.
102 *Cobra Venom Test in Syphilis. H. J. Farbach, Louisville.
103 Delivery of a Hunchback. W. B. Doherty, Louisville.
104 *Unusual Goiter. J. R. Wathen, Louisville.

97. **Accidental Heart Murmurs.**—The typical accidental endocardial murmur, Askenstedt says, is characterized by its systolic rhythm, by the location of its maximum intensity in the left second intercostal space, by its limited area of transmission, by its softness and low intensity, by its inconstancy and finally, by the absence of all physical signs of cardiac dilatation and hypertrophy. The purpose of his paper is to suggest the importance of intelligent and scrupulous care in the examination of the heart conditions, not alone for the gratification of the physician himself in his effort to obtain a correct diagnosis, but as well for the convenience and peace of mind of the patient. Research has brought to light the fact that accidental murmurs are of much more frequent occurrence, especially in later childhood, than was formerly supposed, and that through lack of familiarity with the character and nature of these murmurs physicians often bring on their patients the handicap of fancied invalidism. It is doubtless true that applicants for life insurance are all too frequently rejected unjustly because of a murmur which when properly investigated would prove accidental. And, finally, in the treatment of these cases, discrimination cannot be too carefully practiced since in accidental murmurs the cause is systemic, and the remedies, as well as adjuvant measures should be directed to the general ill-health rather than to its local manifestations.

102. **Cobra Venom Test in Syphilis.**—Farbach reports the results obtained in thirty cases. Ten were cases of the severe secondary and tertiary type. Three were non-specific erythemas. Two were of malignancy. Five were cases under treatment. Fifteen were cases with a history of the infection from twenty to fifty years ago, with no symptoms in the meanwhile. The test in the ten cases of advanced secondaries and tertiaries was strongly positive showing little or no hemolysis even in dilutions. In the three non-specific erythemas, one was psoriasis, one erysipelas and one measles, the test was negative. In the malignant conditions, one was a sarcoma and the other a carcinoma. In the sarcoma the Wassermann and the venom test were negative. The series of gave a complete negative result. In the carcinoma both the Wassermann and the venom were negative. The series of five cases under treatment gave some interesting and instructive results. Two of these had received the ordinary complete course of treatment and had shown negative Wassermanns for several months. The other three had received both arsenic and mercury medication and although the patients had not taken the full course of treatment the Wassermann test was negative in each. All of this series gave a decided positive result with venom. These twenty cases give results that have a direct bearing on the practical every-day treatment side of the question. This last series of fifteen cases wakens a different interest.

Farbach has collected in the past three years twenty-six cases that give a history of having contracted syphilis from twenty to fifty years ago, having had the primary and secondary manifestations of the disease. There has been no evidence of the disease in the individual or his family since his treatment which was instigated at the time of the clinical evidence. Still twenty-three of the twenty-six showed a positive Wassermann. The authors have been able to test fifteen of these cases with the cobra venom and in every instance the reaction was negative.

104. **Unusual Goiter.**—The features in this specimen to attract attention are that the goiter had completely encircled the trachea and dissected it away from the underlying esophagus. It had also left a mould of the larynx in its substance at the upper part. The tumor was exceedingly difficult to remove and looked as if it had been poured into the neck as in a mould and solidified around the larynx and trachea.

Medical Record, New York

June 21, LXXXIII, No. 25, pp. 1105-1152

105 *Incompetency of Ileocecal Valve. J. H. Kellogg, Battle Creek, Mich.
106 Clinical Study of Application of Improved Intravesical Operative Methods in Diagnosis and Therapy. L. Buerger, New York.
107 New Instruments for Duodenum and Small Intestine. M. Einhorn, New York.
108 Paranoid State. M. K. Isham, Columbus, O.
109 Case of Exophthalmic Goiter with Scleroderma and Positive Wassermann Reaction, Treated with Salvarsan. H. F. L. Ziegel, New York.
110 Local Autogenous Temperature Variations, a Cause of Labyrinthine Vertigo. E. P. Fowler, New York.

June 28, LXXXIII, No. 26, pp. 1153-1214

111 *Sciatica and Its Treatment. E. L. Hunt, New York.
112 Dietetic Habit and Gastric Function. C. S. Fischer, New York.
113 Economic Importance of Speech Defects. I. S. Wile, New York.

114 Importance and Value of Inverted T-Incision in Vaginal Surgery. S. W. Bandler, New York.
115 Bronchial or True Asthma. H. De Wolf, Glen Springs, Watkins, N. Y.
116 Scientific Sanitation in Rural Health Work. H. B. Bashore, West Fairview, Pa.
117 Case of Trichinosis with Autopsy. E. P. Bernstein, New York.
118 Case of Complete Transposition of Viscera. S. Horwitt, New York.

105. **Incompetency of Ileocecal Valve.**—In an analysis of the symptoms of sixty cases in which the ileocolic valve was shown by roentgenoscopy to be incompetent, and which have come under the observation of Kellogg and his colleagues (April, 1912, to January, 1913), the characteristic symptoms of intestinal stasis were found constantly present. In 87 per cent. of cases the patient complained of constipation. In eight cases (13 per cent.), the patient complained of too frequent bowel movements, a condition which was found to be due either to irritation arising from stasis or to the passage of undigested material into the colon. Lane's kink was found associated with gastric, duodenal or ileal stasis, or gastric ulcer, in sixteen cases, or only 27 per cent. Lane's kink was absent in twenty-seven cases in which gastric stasis, duodenal stasis, ileal stasis or gastric ulcer was found, or 45 per cent. of the whole number of cases. In fifty-three of the sixty cases, or 88 per cent., one or several of the following conditions was found present: gastric stasis, gastric ulcer, duodenal stasis, ileal stasis, adhesions about the pylorus or gall-bladder, Lane's kink, enlargement of the liver, hepatic insufficiency, gastritis.

One or several of the following named conditions was found in each one of the sixty cases (100 per cent.): gastric stasis, gastric ulcer, duodenal ulcer, duodenal stasis, ileal stasis, cecal stasis, dilated cecum hepatic or pyloric adhesions, Lane's kink, rheumatism, albumin or casts, migraine, gastritis, hepatic insufficiency, enlargement of the liver. The small number of cases of diarrhea, only 13 per cent. (eight) of the whole number of cases, is explained by the existence of colitis in a very large proportion of the cases. In these cases, the incompetency of the valve was evidently compensated by increased antiperistalsis. It is certainly evident that diarrhea is not a common symptom of incompetency of the ileocolic valve, as has been heretofore believed.

Kellogg regards it as highly significant that one or several of the following symptoms appeared in 97 per cent. (fifty-eight) of the cases: gastric ulcer or stasis, duodenal ulcer or stasis, cecal stasis or dilatation, ileal stasis, Lane's kink Basing his conclusions on the above data, Kellogg says it is evident that Lane's kink was not the determining cause of the various morbid conditions present. On the other hand, the constant association of incompetency of the ileocecal valve with gastric stasis, duodenal stasis, gastric and duodenal ulcer, ileal stasis, Lane's kink, intestinal intoxication, and other morbid states which arise out of the conditions named, must indicate either a causative relation or the existence of a common cause to which all these morbid conditions are due, including incompetency of the ileocecal valve. It must be conceded, at least, that incompetency of the ileocecal valve is a condition which must greatly intensify the evil effects of colonic stasis or whatever other condition may be the determining cause of such incompetency, and of intestinal intoxication.

111. **Sciatica.**—So far as concerns medication, Hunt says, the list of drugs tried in sciatica is very large. In those cases in which no marked cause is discoverable methylene blue has been recommended. Castor oil is another favorite; it is always of value, as it seems to reduce the congestion and remove the toxemia. Large and repeated daily doses of strychnin help by increasing the resistance, improving the nutrition and toning up the nervous system. The most important thing of all is to keep the general health of the patient as near perfect as is possible. To bring about this result, resort should be had to nerve foods, tonics and stimulants. The glycerophosphates, strychnin and alteratives are of use.

Diet is a detail which, Hunt states, has never received sufficient attention. Any patient who is suffering acute pain and on whose nervous system great and constant demands are being made requires a large a mount of food, and nourishment of a kind which is both stimulating and fat producing. A part of the treatment of every sciatic should, therefore, consist of a diet in which fats predominate. He should have milk, cream, eggs, butter, marrow, bacon and oils, mayonnaise dressing, and cheese. He should have frequent feedings between meals in addition to three regular and large meals. Forced feeding is almost as essential as rest. The principal foods which are contra-indicated are those abounding in the proteids. Therefore meats, especially the red meats, must be eaten sparingly. Alcohol should be interdicted. Large quantities of water aid in two ways, by tending to improve general nutrition and by flushing out the kidneys. An excellent plan is to give these patients half an hour before each meal a large cup of hot water into which has been poured one of the glycerophosphates. A practical point to bear in mind is, that no sciatica is cured until Lasegue's sign can be elicited without giving pain.

There are a certain number of long standing and intractable cases in which no cause can be discovered and in which no treatment has helped. These patients suffer a great deal of pain and a great deal of inconvenience. The best way to manage such patients is to make a complete change of their environment, to get them away from home and friends, to give them a nurse, and to treat their general health. Such patients should be given to understand that time is the most important factor in their care and that many methods will have to be tried. In these cases Hunt advises a treatment consisting of rest, the saline injections, and building up of the general health.

New York Medical Journal

June, 21, XCVII, No. 25, pp. 1269-1328

119 Cancer Research Institute. J. G. Adami, Montreal.
120 Influenzal Otitis. S. M. Smith, Philadelphia.
121 Mensuration and Projection of Posterior Urethra and Vesical Floor. V. C. Pedersen and L. G. Cole, New York.
122 Philosophic Anatomy of Lungs. E. Souchon, New Orleans.
123 Bilateral Nephrolithiasis. O. C. Smith, Hartford, Conn.
124 Is Rapid Cure of Syphilis Possible? W. F. Bernart, Chicago.
125 Healthy Sick Children. L. Kerr, Brooklyn, N. Y.
126 Additional Case of Fracture of Floor of Acetabulum. P. G. Skillern and H. K. Pancoast, Philadelphia.
127 Exercise in Science of Keeping Well. J. Rudis-Jicinsky, Cedar Rapids, Ia.
128 Malarial Hematuria. L. Bloogher, St. Louis.
129 Exophthalmic Goiter; Hyperthyroidism. W. B. Weidler, New York.
130 Case of Ascites due to Failing Compensation in Mitral Regurgitation. F. A. Jones and C. Collier, Memphis, Tenn.
131 Use of Thermostabile Toxines in Urethral and Bladder Infections. F. S. Crockett, Lafayette, Ind.

June 28, XCVII, No. 26, pp. 1329-1380

132 General Principles of Surgical Treatment of Cancer. J. A. Hartwell, New York.
133 Treatment of Infected and Ununited Fracture of Shaft of Femur. R. C. Turck, Jacksonville, Fla.
134 Surgical Luck. J. D. Whitall, Philadelphia.
135 Preventive Medicine in Relation to Psychiatry. J. F. Fitzgerald, Berkeley, Cal.
136 Hallucinations in Paralysis. F. M. Barnes, Washington, D. C.
137 Management and Treatment of Functional Nervous Conditions. L. G. Smart, Lutherville, Md.
138 What Is Sleep? A. Barlow, Philadelphia.
139 Eczema Descendens. W. P. Cunningham, New York.
140 Myoma of Stomach; Report of Case Terminating Fatally by Hemorrhage. C. B. Farr and R. A. Glenn, Philadelphia.
141 Teething in Children. J. S. Heller, New York.

Northwest Medicine, Seattle, Wash.

June, V, No. 6, pp. 149-178

142 *Sacralized Lumbar Vertebrae with Report of Cases. H. B. Thompson, Seattle, Wash.
143 Arteriorrhaphy. J. C. O'Day, Portland, Ore.
144 Review of Principles and Practice of Typhoid Immunotherapy. J. M. Wheate, Boise, Id.
145 Vaccination in Typhoid. W. V. Gulick, Tacoma, Wash.
146 Sinus Involvement in Nasal Conditions. F. G. Reynolds, Logan, Utah.
147 Conservative View of Electrotherapeutics. E. Myers, Portland, Ore.

142. **Sacralized Lumbar Vertebrae.**—Sacralization of the last lumbar vertebra according to Thompson is a congenital condition much more frequent than is generally supposed. It may be present without producing any symptoms whatever, or causing symptoms so severe as to completely incapacitate the person so affected. In the latter class of cases an operation is indicated and it may be expected to give practically complete relief. Some cases present symptoms pointing so directly to the seat of trouble that there is no question as to cause and effect. Other cases present more or less similar symptoms which, however, can be accounted for much better by ascribing them to some other cause, as indicated also by other diagnostic means. A third or borderland class of cases is that in which the sacralization is well marked in the radiograph, but in which it is impossible to say what effect this condition has on the symptom-complex presented.

Ohio State Medical Journal, Columbus

June, IX, No. 6, pp. 265-314

148 Constipation, Headaches and Other Constitutional States in Relation to Displacements of Stomach and Colon. C. A. L. Reed, Cincinnati.
149 Renal Gonorrhea. C. M. Harpster, Toledo.
150 Diagnosis and Treatment of Syphilis. S. J. Metzger, Cleveland.
151 Psychology of Drug Habits. B. F. Beebe, Cincinnati.
152 Modified LaForce Adenotome and Its Use. M. D. Stevenson, Akron.
153 Industrial Diseases. H. B. Blakey, Columbus.

Philippine Journal of Science, Manila

February, VIII, No. 1, pp. 1-66

154 Quantitative Determination of Balantidicidal Activity of Certain Drugs and Chemicals as Basis for Treatment of Infections with Balantidium Coli. E. L. Walker, Manila.
155 *Relationship of Variola and Vaccinia. P. M. Ashburn, E. B. Vedder and E. R. Gentry, Manila.
156 Bionomics of Stomoxys Calcitrans Linnaeus; Preliminary Account. M. B. Mitzmain, Manila.
157 General Conditions Affecting Public Health and Diseases Prevalent in Batanes Islands, P. I. D. G. Willets, Manila.
158 Study of Normal Blood of Carabao. W. H. Boynton, Manila.

155. **Variola and Vaccinia.**—The following basic facts as to the small-pox vaccinia relationship are mentioned by the authors: 1. Small-pox contagion or inoculation gives rise in man to small-pox, a highly contagious, generalized disease of considerable mortality, characterized ordinarily by a preeruptive stage, and other stages related to the appearance, development and subsidence of the eruption. 2. Passed through monkeys and cattle for a few generations and brought back to man, the virus gives rise to vaccinia, a localized, noncontagious, mild disease, that in itself causes no mortality, although septic complications may cause some. 3. Having, by passage, once lost its power to produce small-pox, the virus never regains it, even though passed from person to person (proper hosts for variola virus) for thirty-five (1) or one hundred (2) (3) years.

They advance two possible to them complete and satisfactory explanations for the above facts. 1. The germ of small-pox by passage through certain lower animals loses (acquires) certain properties, and it transmits its altered condition to its offspring forever, a more striking instance of hereditary transmission of acquired characteristics than has ever before (so far as the authors know) been cited. 2. Small-pox is due to a dual and devisible virus, one part of which causes vaccinia and the specific small-pox eruption, the other part being necessary for the production of the contagious, generalized, mortal disease with a distinct preeruptive stage and initial rashes. Clinical observations indicate that vaccination protects against the eruptive, and especially against the pustular stage of small-pox, rather than, or to a greater degree than, against the whole disease, small-pox. This, if true, would afford strong support for the authors' hypothesis. The statement does not in any way imply that the value of prophylactic vaccination is less than has been thought, but does explain some, if not most, of the apparent failures, and also explains the successes resulting from its use; for, with the exception of variolous purpura small-pox principally kills by, in or as a result of, its pock stage.

Public Health Journal, Toronto

June, IV, No. 6, pp. 347-392

159 Use of Vital Statistics in Public Health Service. G. C. Whipple, New York.
160 Health Matters in Ontario. A. H. Wright, Toronto.
161 Importance of Milk as Food. A. W. MacPherson, Peterborough.
162 Helping Children to Good Citizenship. J. J. Kelso, Toronto.
163 Disposal of Domestic Sewage in Suburban and Rural Areas. R. E. Wodehouse, Fort William, Ont.
164 Care of Teeth of School Children in Germany. Dieck, Berlin.
165 Memoranda of Sanatoriums for Tuberculosis with Mostly German Data. W. S. Magill, U. S. Army.

Surgery, Gynecology and Obstetrics, Chicago

May, XVI, No. 5, pp. 463-586

166 *Indications and Results of Radiculectomy. O. Foerster, Breslau, Germany.
167 Surgery of Spinal Cord Tumors from Neurologic Viewpoint. D. Hecht, Chicago.
168 Field of Usefulness of Clinical Congress of Surgeons of North America. A. J. Ochsner, Chicago.
169 *Experimental Ligation of Portal Vein: Its Application to Treatment of Suppurative Pylephlebitis. H. Neuhof, New York.
170 Rectal Anesthesia. H. Schlimpert, Freiburg, Germany.
171 *Osteoplasty, J. B. Murphy, Chicago.
172 Extirpation of Lachrymal Sac. M. Standish, Boston.
173 Final Results in Hypophyseal Surgery. A. B. Kanavel, Chicago.
174 Ectopic Pregnancy Associated with Anomalous Fallopian Tubes. O. V. Huffman, New York.
175 Certain Problems and Procedures in Surgery of Spinal Column. C. H. Frazier, Philadelphia.
176 Proctoclysis: Experimental Study. H. H. Trout, Roanoke, Va
177 Present Status of Radical Abdominal Operation for Cancer of Uterus. R. Peterson, Ann Arbor, Mich.
178 Anatomy of Inguinal Region, with Special Reference to Absence of Conjoined Tendon. W. Hessert, Chicago.
179 *Use of Indigocarmin Intravenously as Test of Renal Function. H. D. Furniss, New York.
180 Vasostomy-Radiography of Seminal Ducts. W. T. Belfield, Chicago.
181 Case of Complete Anterior Dislocation of Both Bones of Forearm at Elbow. R. Winslow, Baltimore.
182 Perirenal Hematoma. J. Speese, Philadelphia.
183 Case of Blood-Transfusion in Ectopic Pregnancy. E. L. Cornell, Chicago.
184 Cautery in Radical Treatment of Cancer of Cervix. X. O. Werder, Pittsburgh.

166. **Radiculectomy.**—The results of Foerster's work may be summed up as follows: Root resection for the relief of pain, 44 cases, 6 deaths. Cervical roots, 22 cases; thoracic roots, 11 cases; lumbar and sacral roots, 11 cases. Results: successful, 12 cases; failures, 23 cases; result unknown, 3 cases. Root resection for relief of gastric crises: Total number of cases, 64. Survivors, 58; successful, 56; failures, 2; deaths, 6; number showing no relapse, 29; number showing considerable improvement, 18; number showing small improvement, 9. Root resection for relief of spasticity: Eighty-eight cases of congenital spastic paralysis treated by resection of posterior lumbar and sacral roots, with six deaths. In a large majority the results have been satisfactory, part even excellent. Three cases of hydrocephalus with spastic paraplegia; two died and one was greatly benefited. Eight cases of spastic paraplegia as the consequence of infantile encephalitis, all more or less successful. There were four cases of spastic paralysis of traumatic origin: two were successful, two not. One case of spastic paraplegia was due to a tumor of the spinal cord; the tumor had previously been removed some time before the root resection. No particular result. In one case of Potts' disease, stationary for a long time, good result. Six cases of syphilitic myelitis all were successful, although in one case the syphilis progressed later on, causing renewed paralysis. Among eleven patients with disseminated sclerosis, four died, four obtained a favorable result, and three no success. The sclerosis progressed rapidly after the operation. In twenty-three patients with spastic paralysis of the arm treated by resection of posterior cervical roots, two died; in the majority the result was not good, a satisfactory

improvement being obtained in only a few cases, since the spasticity was *not accompanied* by any great paralysis.

169. **Experimental Ligation of Portal Vein.**—Experimental complete ligation of the portal vein Neuhof found is immediately fatal. Death results from shock. Apparently normal life is compatible with *complete occlusion* of the portal vein, if gradually induced. This is *true for the* human being and the experiment. In the latter, gradual obliteration of the lumen can be successfully induced in a very brief period. The liver remains practically normal with complete occlusion of the portal vein existing for a short time (experimentally), and for very prolonged periods (clinically). The reason for this lies chiefly in the development of a hepatopetal collateral circulation. The latter is demonstrable clinically and experimentally. In the experiment the hepatopetal circulation appears to develop regularly in the gastrohepatic omentum. *An active treatment* of suppurative pylephlebitis is suggested on the basis of the above summarized results. *Ligation* of the portal vein, with the modifications embodied in the paper, is the treatment that is advocated. The operation is worthy of trial in an attempt to improve the results of an affection so regularly fatal.

171. **Osteoplasty.**—Murphy presents in detail his views on osteoplasty based on his extensive clinical observations and experimental work, and reports twenty-one cases illustrating the great variety of his work. The original article should be consulted for particulars. Its length and scope prohibit an abstract. It is well illustrated.

179. **Indigocarmin Intravenously as Test of Renal Function.**—Furniss uses this drug intravenously in a strength of 0.3 per cent. and in amounts varying from 5 to 10 c.c. He has seen no difference in the time of appearance whether he used 5 or 10 c.c. The beginning of elimination has been noted by observing the ureteral orifices through the *cystoscope, and* this has ranged from *two to six minutes, with an average of three and a half.* The larger part is excreted in the first fifteen or twenty minutes, as after this time the color of the drug has almost entirely disappeared. No local pain nor systemic disturbance has been noted.

Tennessee State Medical Association Journal, Nashville

June, VI, No. 2, pp. 1-44

185 School Hygiene, or Health and Progress of School Child. F. Allport, Chicago.
186 Importance of Medical Lectures in Rural Schools. W. S. Farmer, Cookeville.
187 Pediatric Practice in Small Town and Country. W. N. Lackey, Gallatin.
188 Business Side of Medical Practice. D. L. Flanary, Dyersburg.

Texas State Journal of Medicine, Fort Worth

June, IX, No. 2, pp. 35-88

189 Official Health Score. O. Dowling, Shreveport, La.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Australasian Medical Gazette, Sydney

May 3, XXXIII, No. 18, pp. 413-436

1 Destruction of Mosquitoes, Fleas, Flies, Pediculi and Other Insect Carriers of Disease. J. S. Purdy.
2 Acidosis and Acetonemia, with Report of Four Cases. H. H. Parkinson.
3 Case of Cerebral Gumma. J. L. Gibson.

May 10, XXXIII, No. 19, pp. 437-458

4 Some Pressing Problems Confronting the Branch. F. S. Hone.
5 Fatal Case of Acute Lupus Erythematosus. W. McMurray and L. Johnston.
6 Tropical or Climatic Buboes. A. J. J. Triado.
7 Medicolegal Note. J. A. Goldsmid.

May 17, XXXIII, No. 20, pp. 459-480

8 Future of Medical Profession in Australia. E. P. Thurston.
9 Some Problems and Paradoxes of Medical Practice. W. F. Litchfield.
10 Case of Puerperal Tetanus. R. Worrall.
11 Case of Carcinoma of Liver in Australian Aborigine. L. T. Bancroft and J. B. Cleland.

May 24, XXXIII, No. 21, pp. 481-506

12 Reduction of Typhoid in Australasia. J. S. Purdy.
13 Referendum and Patent Medicines. D. Rosenberg.
14 Pernicious Anemia in Light of Modern Research. A. E. Finckh.

British Medical Journal, London

June 7, I, No. 2736, pp. 1193-1256

15 *Clinical Study of Pneumonia. J. A. Lindsay.
16 *Radium in Treatment of Malignant Disease. R. Knox.
17 Diachylon or Duty: Call to Action. T. Oliver.
18 Use of Celluloid in Treatment of Tuberculous Disease of Spine. H. J. Gauvain.
19 *Case of Complete Auriculoventricular Heart-Block. T. W. Griffith and A. M. Kennedy.
20 Position and Form of Normal Human Stomach. A. M. Paterson.
21 Shape of Normal Empty Stomach. J. S. B. Stopford.

June 14, No. 2737, pp. 1257-1304

22 *Clinical Importance of Sympathetic Nervous System. S. A. K. Wilson.
23 Varieties and Treatment of Chorea. F. Langmead.
24 Avoidable Difficulties in *Hand-Feeding of Infants.* E. Smith.
25 Oral Sepsis in General Practice. A. Mills.
26 Autogenous Vaccines in Treatment of Chronic Joint Affections. B. Hughes.
27 *Vaccines in Treatment of Chronic Bronchitis and of Asthma. J. H. H. Pirie.

15. **Pneumonia.**—A series of 100 consecutive cases of pneumonia was analyzed by Lindsay. Under 20 years there were 22 cases and no deaths. Under 40 there were 67 cases, with 8 deaths; average mortality, 11.94 per cent. After 40 the *mortality rose rapidly.* The *mortality* was identical in the *two sexes. The influence of occupation on the attack-rate* and the mortality is not noteworthy. There was a definite history of alcoholic excess in 17 cases—all males—of whom 4 died, 3 of these being over 40 years of age. In 18 cases there was a history of previous attacks, varying in time from thirty years to three months before admission. Of these only 2 died. One patient who had had two previous attacks recovered. Only 6 patients attributed their attack to a wetting. Twelve patients had a definite history of tubercle, and of these only *one died. The absence of a history of influenza is noteworthy.* Forty-seven patients gave a history of one severe, prolonged rigor. One patient had two rigors. One patient had three rigors. One patient had several rigors. One patient had "shivered for six hours." One patient had "shivered for three days." Forty-eight cases gave no history of rigor. Early prostration was marked in nearly every case. Only two patients remained at work after the initial rigor.

Most patients presented a typical pneumonic syndrome, but 5 patients were admitted as "abdominals"—*namely,* 3 as "colic"; 1 as enteric fever; 1 as subphrenic abscess. All these patients recovered. Thirteen had persistent vomiting; 1 had subphrenic abscess. All these patients recovered. Seventeen had albuminuria in considerable amount: of these 6 died—*mortality,* 35.3 per cent. Seven had valvular disease of the heart: of these only 1 died—mortality, 14.3 per cent. Three had marked delirium; all died. One had practically no symptoms. The most noteworthy feature was the *high mortality in cases in which the maximum temperature ranged* from 101 to 102 F. The *analysis* emphasizes the deadliness of double pneumonia. It shows a heavier mortality in right than in left pneumonias. No case of abscess of the lung was recorded. One patient developed aortic reflex during the attack. No clear case of malignant endocarditis occurred in the series, though its presence was more than once suspected. No patient, not previously tuberculous, developed phthisis as the result of his illness. *Pleurisy was only noted as a complication where it was a prominent feature.* No case of meningitis occurred. A termination by lysis was recorded in 34 per cent. of cases. The pneumococcus was found to be practically constant in the sputum.

The attack-rate was much higher in the months of November to May than in the months May to November. The mortality shows some curious fluctuations in the *monthly averages,* but is, on the whole, higher *in the months of greater prevalence* of the disease. In six years *out of fifteen the* mortality was *nil, while in seven years* it was over 30 per cent. The general mortality was 20 per cent., or, omitting two cases which were moribund on admission, 18 per cent.

Lindsay treats pneumonia as an acute general infection, with special impact on the lungs, inducing a vrey intense type of toxemia and involving special danger from the side of the heart. Everything that tends to conserve the patient's strength and remove sources of irritation receives attention. Only milk is allowed—3 pints in the twenty-four hours—any excess of nourishment being regarded as likely to remain unabsorbed, and to distend the stomach and embarrass the heart. A light warm poultice, frequently renewed, is applied to the chest, care being taken not to embarrass the respiratory movements, and after the third or fourth day this is replaced by a jacket of cotton-wool. In the hope of diminishing the toxemia the skin, bowels and kidneys are gently stimulated, all remedies which might tend to depress the heart being avoided. If the patient is in great pain or very restless a hypodermic of morphin or a few grains of Dover's powder are administered. In the presence of any signs of circulatory weakness strychnin is given hypodermically, and ammonia and digitalis and sometimes caffein by the mouth. Alcohol is used sparingly, and only in the more serious cases and in moderate or small quantity. Of the 100 cases only thirty-nine received any alcohol. Brandy was the usual stimulant, and the amount seldom exceeded 3 or 4 ounces. In the presence of unusual dyspnea or cyanosis, oxygen was administered, the gas being passed through alcohol. Tepid sponging was vigorously practiced in every case, and cold sponging when the indications seem to point to its use. Antipyretics or expectorant drugs are not administered. Bleeding was not employed in any of this series of cases. The various complications, when they arise, were treated on the usual lines.

16. **Radiotherapy of Malignant Disease.**—In all cases of early cancer, Knox is convinced that the operative method is undoubtedly the best; it is quicker, safer and offers the best prospect of cure. Radium he regards as a useful adjunct to the treatment of all cases, first as a prophylactic after operation, and, failing operation, the next best method we possess. It must, however, be stated that Roentgen rays are in selected cases quite as useful as radium. In patients who refuse operation, or are for other reasons not suitable for operation, radum is also a useful remedy. In operable cases radium may help to render the case operable; and, failing that, is undoubtedly useful as a palliative measure and its use should be resorted to in such instances.

19. **Complete Auriculoventricular Heart-Block.**—The pathologic examination of the heart showed in this case that there was a generalized hypertrophy of the cardiac musculature, and dilatation of both auricles and of the right ventricle; the left ventricle was contracted in systole, and there was an excessive deposition of fat on the surface of the heart. There was some superficial atheroma of the aorta, and, about 1½ inches above its valves, there was a large thick atheromatous patch which was softened in its center; the coronary arteries were slightly fibrosed. The mitral orifice was normal in width, but the tricuspid was slightly dilated. The anterior mitral cusp on its ventricular aspect showed a uniform atheromatous thickening of its basal half, and extending outward in strands to some of the chodae tendinae, and at its leftmost edge, where it meets the posterior mitral cusp, there was a small area of calcification about the size of a lentil. This atheromatous area on the anterior mitral cusp extended inward and spread on to and involved the adjacent half of the pars membranacea septi, so that it must at least pass over the auriculoventricular bundle. Some of the chordae tendinae were thickened—a chronic atheromatous thickening—and the tips of the papillary muscles show some degree of fibrosis. There was fibrosis of the endocardium of the left ventricle just below the attachment of the mitral valve, and this fibrosis was distinctly evident over the situation of the auriculoventricular bundle—namely, below and behind the pars membranacea septi. In this situation the fibrosis was seen to be continuous with the atheromatous thickening of the anterior mitral cusp along its attached margin bordering the anterior edge of the pars membranacea septi. There were no other valvular lesions.

Microscopic examination of sections removed from the cardiac septum showed enormous, dense fibrosis at the base of the mitral valve, extending outward as a thickened atheromatous plaque on the ventricular aspect of the anterior mitral cusp and inward to the auriculoventricular node. The fibrosis extended downward into the ventricular septum as a very thick and very dense layer; this layer extended from the endocardium of the left ventricle inward to the auriculoventricular bundle, forming a thick mass along its left side, and extending underneath it, and appearing also along its right side, though here it was less abundant. The thick fibrous layer on the left side of the bundle could be easily followed from the mitral valve to the aortic valve, at the base of which it again increased in bulk. The normal space between the bundle and cardiac tissue proper was almost completely obliterated, and, particularly from the left side, strands of fibrosis could be seen extending into the bundle about its middle from the greatly thickened sheath, and so breaking the continuity of the main stem. In the dense fibrosis at the base of the mitral valve, along the left side of the bundle and at the base of the aortic valve, there were areas of calcification. In the auricular tissue above the node there was probably some excess of fat, and a short distance below the node there was some fatty infiltration in the bundle visible as numerous large globules. The small arterioles in the node and bundle and cardiac tissue generally showed well-marked thickening and considerable periarterial fibrosis. The principal vein from the node and its tributaries showed recent thrombus within them—a terminal formation—but the main trunk was not completely occluded.

22. **Sympathetic Nervous System.**—According to Wilson a substance normally secreted by the adrenal medulla passes into the general circulation and maintains the tone of all sympathetically innervated tissue, including other ductless glands. The cells which secrete this substance are embryologically of sympathetic origin. Other substances are produced in the organism which have an antagonizing, neutralizing or compensating effect when compared with that of the adrenal secretion, and they act rather on the autonomous system. Similarly, many commonly employed therapeutic agents have an action on one or other of these groups. Cocain, atropin, caffein, stimulate the sympathetic system and inhibit the autonomic system. Morphin, chloral, antipyrin, inhibit the sympathetic system and stimulate the autonomic system.

26. **Autogenous Vaccines in Chronic Joint Affections.**—Rheumatoid arthritis is, Hughes says, a misleading term. He would prefer to call the condition "metastatic arthritis"—that is, metastatic to some infective focus in the body. Pathologically, rheumatoid arthritis presents features of a chronic infection, the synovial membrane is pinker than normal, it is soft and succulent, and often villous processes project from it. The articular ends of the bones beneath the articular cartilage show rarefaction, while microscopically there is present some extent of round-celled infiltration in the synovial membrane. Although the synovial membrane is thickened, it does not show a tendency to ulcerate or undergo destructive changes, as in the case of tubercle, and possibly syphilis. The three main points in the treatment of this disease are: 1. To find the infecting organisms. 2. Having found them, to raise the opsonic index of the individual against these organisms; this is most quickly accomplished by the use of autogenous vaccines. 3. Having rendered the patient artificially immune, to remove where possible the primary focus and apply local treatment to the affected joints. The commonest foci of infection in Hughes' cases have been the teeth, the nose and nasopharynx, chronic otorrhea, the lungs, the intestinal tract and leucorrhea.

27. **Vaccine Treatment of Chronic Bronchitis and Asthma.**—Vaccine treatment is not recommended by Pirie to the exclusion of other measures, but simply as an "extra" where these fail to give satisfactory relief. His results have been good.

Journal Laryngology, Rhinology and Otology, London

June, XXVIII, No. 6, pp. 281-336

28 Malignant Disease of Esophagus, with Special Reference to Carcinoma of Upper End. A. L. Turner.

Lancet, London

June 7, I, No. 4684, pp. 1575-1642

29 Some Industrial Accidents and Diseases. T. Oliver.
30 *Small Muscle-Splitting Incision for Exposure of Pelvic Portion of Ureter. F. Kidd.
31 *"Diagnostic" Tuberculin. N. D. Bardswell.
32 Significance of Renal Tube Casts in Urinary Sediment. G. L. Thornton.
33 Colloids of Iron. L. Dimond.
34 *Two Unusual Cases of Infantile Scurvy. E. Pritchard.
35 *Urethral Calculus of Unusually Large Size. E. A. Walker.

June 14, I, No. 4685, pp. 1643-1714

36 Place of Climatology in Medicine. W. Gordon.
37 Abduction Treatment of Fracture of Neck of Femur. R. Whitman.
38 Finsen Light Treatment at London Hospital, 1900-1913. J. H. Sequeira.
39 Breast-Feeding. D. Forsyth.
40 Idem. L. Naish.
41 Idem. D. H. D. Cran.
42 *Case Having a Bearing on Localization of Auditory Center. W. Boyd and J. S. Hopwood.
43 Case of Full-Term Living Child Removed by Laparotomy in Extra-Uterine Pregnancy. N. L. Hood.
44 Ethyl Chlorid in Treatment of Cutaneous Epithelioma. H. Seidelin.
45 Experimental Research into Origin of Inorganic Chlorid in Gastric Secretion. C. Singer.

30. **Incision for Exposure of Pelvic Portion of Ureter.**—The incision devised by Kidd is made through the skin and superficial fascia two fingers' breadth (1½ inches) above and parallel to Poupart's ligament. It is 3 inches long and should extend from the edge of the rectum muscle 2 inches outward and 1 inch inward. The center of the incision lies vertically above the internal abdominal ring.

31. **"Diagnostic" Tuberculin.**—Bardswell's experience suggests that tuberculin is of distinct service for diagnostic purposes. He has been able to form a positive opinion in 48 per cent. of doubtful cases. In the other 52 per cent. he obtained information of a negative character and had no available clinical data.

34. **Unusual Cases of Infantile Scurvy.**—The interest in the first case cited by Pritchard lies in the extensive development of edema from which no part of the body seemed exempt. The infant, aged 9 months, had a pallid, waxy appearance. Another peculiarity of the edema was that, although it looked as if it would easily pit on pressure, it was practically impossible to obtain a permanent indentation with the fingers, no matter how deeply they were inserted into the skin. The second case was as follows: On March 30, an infant, aged 10 months, fell from a mail cart on to a mat on the floor; it did not appear at the time to be seriously injured, but the same evening a swelling gradually appeared on the side of the head on which it had fallen. On the following day examination was negative. A few days later the swelling had increased rather than decreased in size, and the child seemed lethargic and disinclined to move. On examination Pritchard could find no evidence of cerebral pressure, but on inquiry he discovered that the infant had not been well for some days before the accident. The child had been lethargic, disinclined to move, had had no appetite and seemed generally indisposed. The method of feeding again was not without its significance. There was general tenderness over all the limbs, and evidently strong aversion to being moved or otherwise disturbed. The gums were spongy and of a purple color. Pritchard therefore prescribed an antiscorbutic diet of orange-juice, raw meat-juice, egg water and milk, and strongly advised against aspiration or other interference with the hematoma of the scalp, which by the time of examination had assumed an enormous size. The general condition of the infant rapidly improved under this treatment, and at the end of ten days it had practically returned to normal health and showed an increase in weight of over 18 ounces.

35. **Urethral Calculus of Unusually Large Size.**—The stone in this case measured: length, 2½ inches; breadth, 1 7/16 inches, and depth, 1 11/16 inches. It weighed 2 ounces 5 drams when dry, and was composed of urates with a coating of phosphates about one-fourth inch thick.

42. **Localization of Auditory Center.**—The authors cite a case, the importance of which lies in the fact that the destructive lesion might have been especially designed to isolate the gyri of Heschl, so completely did it destroy the other parts of the temporal lobe which are considered to have an auditory function. The hearing of the patient was perfect, nor was his intelligence impaired to any marked extent. The lesion was a unilateral one, and it is possible that the right side may have functioned to a certain extent. The authors are certain, however, that if the auditory center on the left side had been seriously interfered with there would have been some marked impairment of the function of hearing, and especially of the understanding of spoken words. The patient was weak-minded and somewhat irrational in his conversation, but was able to understand all that was said to him. He was liable to periodic attacks of noisy excitement and at times became very abusive. His hearing was apparently perfect. An interesting feature of the case was that he suffered from auditory hallucinations. He died from myocardial degeneration. At the post-mortem examination it was found that the greater part of the temporal lobe of the left cerebral hemisphere was replaced by a large cyst containing a clear colorless fluid. The destruction was of a most extensive character, involving the whole of the temporal lobe with the exception of the third and the anterior extremities of the second and first convolutions, the last named bearing the anterior gyrus of Heschl on its upper surface. The remainder of the brain was perfectly normal, but there was a considerable degree of arteriosclerosis of the vessels at the base of the brain. Sections from various parts of the brain, including the gyri of Heschl, were examined, but no abnormalities were detected.

Annales de Médecine et Chirurgie Infantiles, Paris

May 15, XVII, No. 10, pp. 309-344

46 Pathologic Physiology of the Intestines. B. Triboulet.
47 Attenuated Osteomyelitis; Two Cases. (Ostéomyélite de la tuberosité antérieure du tibia: ostéomyélite de la deuxième phalange du médius.) Bosquette.
48 Foreign Bodies in the Esophagus. (Corps étranger de l'oesophage.) P. Le Jeune.
49 The Diathesis. (Le lymphatisme. Diathèse d'anaphylaxie. Immunité. Une conception générale des diatheses.) J. Galup.

Archives Génerales de Chirurgie, Paris

May, VII, No. 5, pp. 513-640

50 Metatarsal Neuralgia. R. Grégoire.
51 *Rupture of the Spleen from Contusion; Thirteen Cases. (Rupture traumatique de la rate sans plaie extérieure.) L. Norrlin.
52 *Lipoma of the Synovial Fringes of the Knee. (Synovite chronique polypiforme fibro-adipeuse.) H. Lefèvre and E. Dubourg. Commenced in No. 3.

51. **Rupture of the Spleen.**—Norrlin has compiled thirteen unpublished Swedish cases of rupture of the spleen from a contusion. Two of the patients were women; the youngest patient was 7, the oldest 67, and the spleen was already pathologic in four cases. In one case the contusion occurred in an epileptic seizure, the spleen being already degenerated from alcoholism and infection. The first stage of shock and internal hemorrhage is generally past when the patient is first seen. The key to the diagnosis is an exploratory laparotomy, and it is better not to waste any time on exact differentiation. The results of operative treatment are growing constantly better; except for the first case (1890), the nine patients operated on recovered after tamponing or splenectomy. In one case the rupture was sutured and tamponed, but persisting hemorrhage made splenectomy necessary the next day. In two cases only part of the spleen was removed. Four of the five patients treated by splenectomy with immediate suture of the abdominal wall had regained full earning capacity when reexamined from two to nine months after the accident. Two boys, 10 and 11, both recovered after tamponing the rupture.

52. **Hypertrophy of the Fatty Processes of the Synovial Membrane of the Knee.**—Lefèvre and Dubourg summarize from the literature seventy-seven articles reporting one or more cases of hypertrophy of the synovial fringes of the knee. The main points in diagnosis are the long duration of the affection and the remarkable contrast between the relative

freedom of movement and the changes in the shape of the joint: also the contrast between the frequency and intensity of the pains when the knee is used and their rapid subsidence during repose; also the integrity of the bone and cartilage forming the joint and the peculiar palpation findings. In short, the first thing is to think of the possibility of lipomas and to appreciate the contrast between the appearance and palpation findings and the practically unimpaired functioning of the joint. Conservative measures are futile; partial or total synovectomy is indicated, leaving the bones and cartilages intact. As a rule, the patients recover without impairment of functioning as soon as the excrescences have been removed from the synovial membrane. The article aims to prove that the three affections (arborescent lipoma, villous polyarthritis and Hoffa's disease) are merely three forms of a single lesion which may be termed chronic, polypiform, fibro-adipose synovitis. Rudimentary forms may be responsible for certain obscure knee affections which prove refractory to ordinary conservative measures.

Archives des Maladies du Cœur, Etc., Paris

June, VI, No. 6, pp. 369-432

53 *Paralysis of Recurrent Nerve with Mitral Stenosis. (De la paralysie récurrentielle gauche dans le rétrécissement mitral.) C. Lian and E. Marcorelles.
54 Transient Alternating Pulse. (Note sur le pouls alternant transitoire et sa valeur pronostique.) C. Esmein.
55 *Pharmacologic Research on Adonis Vernalis. (Rythme couplé adonique.) M. Roch.
56 *Peptone Injections in Treatment of Familial Hemophilia and Purpura. P. Nobécourt and L. Tixier.
57 Clinical Importance of the Viscosity of the Blood. (La viscosité du sang. Applications pratiques au diagnostic, au pronostic et au traitement.) M. Lisbonne and J. Margarot. Commenced in No. 4.
58 The Blood Pressure in the Legs. (Etude des mensurations de pression aux membres inférieurs.) van Bogaert.

53. **Recurrent Paralysis with Mitral Stenosis.**—Lian and Marcorelles report a case of paralysis of the left recurrent in a woman of 42 with pure mitral stenosis, probably of rheumatic origin; the paralysis came on after two attacks of right hemiplegia and aphasia. The heart lesion had not reached the stage of congestion of the viscera. Certain features of the case deceptively simulated the syndrome of aneurysm of the aorta; roentgenoscopy is a valuable aid in differentiation. In another case the paralysis of the left recurrent was due to a syphilitic mediastinitis without aneurysm.

55. **Adonis Vernalis.**—Roch observed an unmistakable cumulative action from adonis vernalis in a recent case and a marked action on the heart. The patient had taken 6 gm. of the drug in an infusion daily for sixty-six consecutive days—a total of 396 gm. He was a large man of 65, hearty, with mitral insufficiency and alcoholic cirrhosis. There were no signs that the drug was proving toxic, no headache, nausea nor pain in the stomach, but the pulse of 43 then developed a typical bigeminus form. On suspension of the drug the beat returned to the normal type in the course of three days. After a week 0.2 gm. digitalis was given daily, and again the twin beats returned in three days. The digitalis was dropped and the pulse became normal again. After a week or so the digitalis—0.15 gm.—was resumed, and again the bigeminus appeared. A change was then made to adonis, but no effect was apparent during nearly three weeks' administration, and digitalis was resumed, which brought on again the double beat. These experiences apparently show that 6 gm. of adonis has less pharmacologic action than 0.15 gm. of digitalis, and it probably does not surpass that of 0.1 gm. Consequently, when a prompt and vigorous action is necessary, such as requires 1 gm. of digitalis in three days, we would have to give 60 gm. of adonis to obtain a corresponding action, which no stomach would tolerate. Mayor and Segond last year published research showing that the digestive juices have a destructive action on the active principle of adonis, while the other heart tonics escape this. On the other hand, adonis seems to have a certain diuretic action which justifies its use in moderate doses as an adjuvant, but never as a substitute for the ordinary heart tonics.

56. **Peptone in Treatment of Hemophilia and Purpura.**—Nobécourt and Tixier report a case of familial hemophilia in which repeated subcutaneous injections of a 5 per cent. solution of peptone (Witte) kept the tendency to hemorrhage under control. The boy of 10 was given sixty-seven injections between May, 1910, and October, 1912, series of three or four injections being given at intervals or when there was extravasation of blood in a muscle or joint. At first the blood showed no signs of coagulation for three hours and the venous blood for twenty-four, but now blood from the finger commences to clot in twenty minutes and coagulation is complete in five more. The reds number 4,576,000, whites 9,000, and the hemoglobin is 95 per cent. Injections of serum had proved ineffectual in this case, and in the course of time the peptone seemed to prove less effectual as a preventive of accidents, although retaining unimpaired its influence on already established lesions. The hemorrhages stop after two or three injections of the peptone, and they do not leave the little patient so weak as before the peptone treatment. In the six cases of purpura the peptone had a marked curative action in some, but it was less evident in the others, especially in the more chronic cases.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

May, II, No. 5, pp. 449-528

59 *Technic for Hysterectomy with Diseased Adnexa on Both Sides. (L'hysterectomie abdominale par décollation antérieure dans les pyo-salpinx bi-latéraux.) H. Barnsby.
60 *Death of the Fetus. A. Boissard.
61 *Intraperitoneal Hemorrhage from Genital Organs in Women Outside of Pregnancy. G. Gross and L. Heully.
62 The Intimate Relations between the Peritoneum and Uterine Muscle Tissue. F. La Torre.

59. **Abdominal Hysterectomy with Bilateral Pyosalpinx.**—Barnsby extols the advantages of Faure's technic *par décollation antérieure* when the uterus and its adnexa, intestines and omentum are welded into a solid mass in the small pelvis. Generally all that can be seen is part of the anterior aspect of the uterus. All the difficulties are in the depths, and consequently the aim is to work from below upward and from the front to the back, utilizing the plane of cleavage which offers itself, and everything thus comes out together. In two cases he was able to shell out a pyosalpinx larger than an orange on each side and closely adherent to the intestine above and in front. The first step is to cut a big flap of peritoneum, which is turned back and is utilized later to roof the raw surfaces. The cervix is incised from the front backward and the supports of the uterus are ligated before separating the pyosalpinx. This insures preventive hemostasis. The body of the uterus is turned upward, affording ample access to the adnexa. If a pus pocket is opened the sheet of adhesions around and above protects the large cavity against infection, but there are rarely any mishaps of this kind; the operation proceeds without escape of blood or pus. He gives the details of six cases to sustain the superiority of this method.

60. **Death of the Fetus.**—Boissard states that last year at the Lariboisière maternity there were 391 abortions and 108 macerated fetuses—a total of 499 dead fetuses. It is his impression that syphilis never was so prevalent as at present, and he suggests that possibly the advent of salvarsan has given the public cause to think that syphilis is a disease which can be readily and rapidly cured. As a rule, he says, when the fetus dies the physiologic and pathologic phenomena presented by the pregnant women cease; physiologically speaking, the woman is no longer pregnant. The uterus contains merely a foreign body, a parasitic monster, which must be cast off. In diagnosing, the subjective phenomena should be recorded, but little importance can be ascribed to them. More significant is the subsidence of albuminuria, especially when the albuminuria was of purely gravid origin; other signs are the disappearance of varices and of edema, coinciding with increased elimination of chlorids. Of most importance are the signs of retrogression of the uterus, its change in shape and consistency, and this can be determined only by repeated examination of the woman. The uterus is no longer spindle-

shaped but spreads out more and seems to be uniformly soft; he says that it feels like a mass of wet linen. Ballottement is difficult to produce with the digital impulse, but there may be crepitation of bone if the fetus is macerated. Once convinced of the death of the fetus, measures should be applied at once to insure its expulsion.

61. **Hemorrhage in the Peritoneal Cavity of Genital Origin in Non-Pregnant Women.**—Gross and Heully remark that a tubal pregnancy is generally responsible for intraperitoneal hematocele but medical science, more than any other, is made up of exceptions, and the physician should be particularly on his guard against the association of ideas which would follow if he suggested the word "pregnancy." The intraperitoneal hemorrhage may come from the uterus, stenosis of the cervix causing reflux into the peritoneal cavity. Fordyce reported a case of this kind last year, and a large number of such cases are on record traceable to a uterine myoma. Intraperitoneal hemorrhage from the tube is extremely rare; only one case is known of hemorrhage from a varicose vein in a broad ligament. Hemorrhage from the ovary is more common; Tartanson has compiled twelve cases of blood cysts in the non-pregnant ovary, and Gross recently operated on a woman of 37 on account of severe pain in the left ovary region. The small pelvis contained 400 gm. of fluid blood which had evidently come from a follicle, the ovaries being otherwise sound. The data presented prove beyond question the possibility and comparative frequency of intraperitoneal hemorrhage from the pelvic organs in non-pregnant women.

Bulletin de l'Académie de Médecine, Paris

May 27, LXXVII, No. 19, pp. 503-534

63 Electric Treatment of Circumscribed Abdominal Vasomotor Disturbances. (Les artério-anélastoses par durcissement localisées dans la région abdominale; leur traitement par la d'Arsonvalisation sous forme d'autoconduction localisée.) A. Moutier and M. Letulle.

Bulletins de la Société de Pédiatrie, Paris

April, XV, No. 4, pp. 205-228

64 *Dupuytren's Sign in Congenital Dislocation of the Hip Joint; Its Frequency and Significance. M. Lance.

65 Appendicitis in Children. (Pronostic et traitement de l'appendicite aigue au début de la crise.) M. Savariaud.

64. **Diagnosis of Congenital Dislocation of the Hip-Joint.**—Lance has examined forty-one children with dislocation of the hip-joint and two adults to ascertain the frequency of Dupuytren's sign, that is, the possibility of sliding the femur up and down on the pelvis. This sign is rare in adults but it was constant in children under 2 and in eleven of seventeen children between 2 and 4, while it was rare in older children. It seems almost the rule in infants, and parallels the condition of the ligaments, being most pronounced, naturally, when the ligaments are easily stretched. In one case the ligaments were so loose that the thigh could be rotated inward to 110 degrees.

Journal de Chirurgie, Paris

May, X, No. 5, pp. 529-656

66 *Remote Results of Ovarian Grafts. (Les greffes ovariennes humaines.—Suites éloignées.) T. Tuffier.

67 *Operative Treatment of Rebellious Colitis and Pericolitis. (La typhlo-sigmoidostomie en Y dans le traitement des colites rebelles et de la stase du gros intestin par péricolite membraneuse.) G. Lardennois and J. Okinczyc.

68 *Treatment of Exstrophy of the Bladder. G. Lerda.

66. **Grafts of Ovaries.**—Tuffier affirms that the symptoms of the artificial menopause are due almost exclusively to the suppression of the menstrual function. Modern research and experience has demonstrated the close connection and reciprocal action of the various glands with an internal secretion, and their reciprocal changes when one functionally drops out. For these and other reasons which he enumerates, Tuffier during the last ten years has made a special effort to preserve the balance between the various ductless glands. When possible, he refrains from panhysterectomy for uterine fibromas, merely removing the part of the uterus involved; in case of suppurating uterine adnexa he incises and drains instead of removing the organs, and if the tubes have to be removed he tries to retain the ovaries. When this cannot be done in their normal place, he transplants the ovary at another point, and these autografts, that is, reimplantations of the ovary have done good service in his six years of experience of the method. He applies it only to young women with bilateral salpingitis which has long passed beyond the acute phase and there are no reasons why the uterus should be removed. After having separated the ovaries from the tubes, he implants the two ovaries in the subperitoneal cellular tissue on each side, about 5 or 6 cm. from the peritoneal incision. The raw surface of the hilus is spread out as much as possible on the side of the aponeurosis. No matter how "sclerocystic" the ovary may be, it is suitable for grafting provided it is aseptic. The abdominal wound is then sutured.

Three or five months later the ovaries are the seat of phenomena of congestion. In a typical case described at length one of the ovaries became palpably larger five months after the operation, and menstruation followed a week later and again the following months. In the intervals the ovaries are scarcely perceptible. Only one ovary seems to functionate at each menstruation, and they do not alternate regularly. The menstrual flow appears a week after the ovary swells. This patient is a woman of 26 and she has been under observation for over two years. There seems to be no doubt that the ovaries, after lying latent for five months, resumed their ovulation function and have induced normal menstruation. He has recently reexamined nineteen of his forty-four patients treated with ovary grafting. All but one had menstruation return in from three to seven months. He noticed that during the period of latency the patients had the usual symptoms of the menopause, but all this ceased as soon as menstruation returned. In the women with engrafted ovaries, whose uterus had been removed, the monthly ovulation continued but the disturbances of the menopause persisted. In two cases the engrafted ovary had to be removed later, and he gives illustrations of one ovary removed two years after its implantation. The ultimate outcome has been that three of the patients have had regular and apparently normal menstruation to date; two have menstruated regularly but have had some severe uterine hemorrhages. In three cases menstruation continued for two years and then gradually ceased; another woman has had excessive menstrual hemorrhages, and in four cases the women complain of pain in the engrafted ovary or in the uterus. He regards these conservative measures as indicated especially in cases of excessive thyroid functioning as the symptoms of the menopause are liable to be unusually severe and protracted with hyperthyroidism.

67. **Operative Treatment of Rebellious Colitis.**—An improved technic for typhlosigmoidostomy is described with several illustrations. Others show the special technical points to be avoided in this short-circuiting of the bowel to leave the colon in peace.

68. **Exstrophy of the Bladder.**—Lerda gives an illustrated description of a method which he applied successfully in the case of a boy of 6½. The aim is to make an artificial passage through the pelvic cellular tissue, back of the prostate, the outer end terminating in the anal sphincter. A perineoscrotal pedunculated flap, 4 by 8 cm., is cut with the base in the anus, and this flap is drawn up into the passage bored through the cellular tissue. To complete the lining of the passage he wound with a strip of adhesive cerate plaster, in spiral form, a fenestrated glass drain, the adhesive side turned outward. On this tube he applied a large Thiersch flap, the raw side outward, pierced at each of the openings in the drain. The tube thus prepared was introduced into the artificial passage. It was replaced a week later by a second tube prepared in the same way. The grafts seem to have taken hold well and the passage functionates perfectly. The success of this operation was compromised, however, by the fact that the anus had never been continent. He is now contemplating a second operation to reinforce the anus as for prolapse.

Journal d'Urologie, Paris

May, III, No. 5, pp. 561-704

69 •Amyloid Degeneration of the Kidneys in the Tuberculous. E. Rist and L. Kindberg.
70 •Postoperative Hiccough Sign of Uremia. (Signification du hoquet post-opératoire chez les urinaires.) G. Marion.
71 Delayed Healing of the Bladder after Suprapubic Prostatectomy. L. Thévenot and J. Lacassagne.
72 Influence of Thiosinamin on Urethral Strictures. L. Weissmann.
73 Kidney Cysts. (Kyste hématique et kyste séreux du rein.) Giuliani.
74 Primary Tumors of Kidney Pelvis. J. Mock.
75 The First Sign of Gonorrhea. (La première goutte.) J. Janet.

69. **Amyloid Degeneration of the Kidneys in the Tuberculous.**—On the basis of autopsies in twelve cases, Rist draws the clinical picture of the functional reactions on the part of the kidney in these cases. The proportion of urea and chlorids in the serum is low, and the urea index (Ambard) is very low. This shows a disturbance in secretory functioning exactly the reverse of what is observed in nephritis. The amyloid degeneration seems to be the result of severe injury of the blood, with no connection with preceding local inflammation. The liver, spleen and adrenals show signs of amyloid degeneration before the kidneys.

70. **Postoperative Hiccough.**—Marion remarks that if he had understood the significance of the postoperative hiccough with disease of the urinary apparatus, he might have saved the first of his six patients in this category. The first patient died, the tenth day after prostatectomy, mainly from the exhaustion from ten days of hiccough. His second patient happened to refuse all food and took merely a few sips of tea or water for five days, at the end of which time the hiccough subsided and the man recovered. When Marion met with another case, he allowed the patient nothing but a little water for four days and then only a little milk. This patient had slight temperature and the hiccough kept up for ten days. The urea index (Ambard) in this case indicated a tendency to nephritis, and the case confirmed his suspicions that the hiccough is a sign of intoxication from urea. The urinary organs are adequate to their task under ordinary conditions, but the stress of an operation upsets their balance and uremia results. Treatment should aim to reduce the irritability of the nervous system and thus arrest the hiccough, but the chief indication is to keep the patients on a diet free from nitrogenous elements or on water alone. He has had no further trouble since he has made this his rule. In the fatal case the patient had been given extra nourishing food after the operation, thus directly feeding the tendency to uremia and hence to the hiccough.

Lyon Chirurgical, Lyons

June, IX, No. 6, pp. 589-716

76 •Operative Treatment of Exstrophy of the Bladder. H. Vulliet.
77 Cancer of the Kidney with Thrombosis of the Vena Cava, Two Cases. G. Gayet and L. Bériel.
78 The Hypogastric Plexus in Man. A. Latarjet and P. Bonnet.
79 The Appendix and Tuberculosis. L. Bérard and H. Alamartine. Commenced in No. 5.
80 Benign Tumors of Biliary Passages. P. Savy, P. Bonnet and J. F. Martin.
81 Malformations of the Rectum and Anus; Two Cases. H. Muller.

76. **Exstrophy of the Bladder.**—Vulliet cites statistics which show that 41 per cent. of the children with this deformity die before the age of 5; 18 per cent. between 5 and 10, and 30 per cent. between 10 and 15. Consequently it is better to wait till the age of 7 before applying operative treatment, as by this time all but the more resistant have succumbed. He reports the case of a boy of 3 on whom he performed a plastic operation which proved quite successful for a few years but then cystitis and ascending infection caused hematuria and intense pain, with formation of calculi. Vulliet then applied the Heitz-Boyer method for diverting the urine into the rectum, invaginating a loop of the pelvic colon in the rectum and suturing it to the wall of the rectum and the anus in such a way that it formed an inner canal through which the urine was voided, entirely separate from the passage for the stools. The operation required from 2½ to 2¾ hours and there was considerable shock; the child was too weak to rally and died in anuria. This case teaches the wisdom of doing this serious operation at two sittings, first preparing in the rectum the new passage-way for the urine; this is much easier in children than in adults, owing to the smallness of the pelvis, and absence of fat. When this is all healed and the invaginated bowel trained by injections of water to serve as a new receptacle for the urine, then, and not till then, should the ureters be mobilized and implanted in the rectum. With these modifications, Vulliet thinks this operation has a future.

Presse Médicale, Paris

May 24, XXI, No. 43, pp. 425-436

82 Necessity for Official "Hygienization" of Every Home after a Death. (La désinfection obligatoire automatique pour tous les décès.) L. Landouzy.

May 28, No. 44, pp. 437-444

83 •Pathogenic Treatment of Nasal Hydrorrhea. M. Lermoyez.
84 Technic for Suprapubic Incision of Empty Bladder. (Encore un mot sur la taille hypogastrique à vessie vide.) F. Lastaria.

May 31, No. 45, pp. 445-456

85 Diagnosis of Aortic Insufficiency by the Sphygmomanometer. C. Lian.

83. **Recurring Copious Watery Discharge from the Nose.**—Lermoyez regards nasal hydrorrhea as in many cases a vicarious syndrome, testifying to some disturbance in the metabolism of the organic fluids. He remarks parenthetically that this conception does not please rhinologists as they are "organicists to excess by education and by trade," but he insists that patients in this category belong to the great family of sluggish excretion of waste, the neuro-arthritics. To supplement the inadequate functioning of the kidneys, part of the fluid is thrown off through the nose. When the copious nasal discharge is arrested there is liable to be eczema, diarrhea or other means of escape for the waste. He relates a few examples of such "metastasis." From this point of view, the nasal hydrorrhea is rather a salutary process and local treatment is illogical. Temporary relief may be obtained by insufflation of superheated air. Local cauterization generally fails as the outflow of fluid prevents the action of the cautery. Treatment should aim to reduce the level of the metabolic processes in general and to reduce the intake of food liable to engender toxic waste. He condenses all the indications and treatment thus into the two words "bed" and "milk," keeping the patient in bed for a couple of weeks on an exclusive milk diet. This cures the hydrorrhea and improves the general health, especially when supplemented by a course of some mineral water which stimulates diuresis. The patients cannot understand how the nose can be dried up by drinking such quantities of water, but this very paradox, he remarks, may usefully impress them.

Revue de Médecine, Paris

May, XXXIII, No. 5, pp. 353-448

86 Hemolytic Origin of Cirrhosis with Pigmentation. (Conce tion des cirrhoses pigmentaires.) G. Roque, J. Chalier an L. Nové-Josserand.
87 Bilateral Tuberculous Pneumothorax. C. Roubier.
88 •Relation of Erosions of the Teeth to General Pathology. Coustaing and Filderman. Commenced in No. 3.

88. **Erosion of the Teeth and General Pathology.**—Coustaing and Filderman give detailed histories of sixty-four cases of erosion of the teeth, calling attention to the inevitable coincidence of other allied stigmata of degeneration. The list includes malformations of the hands, teeth and ears, prognathism, scoliosis, delayed and disordered menstruation or other abnormalities indicating a more or less profound disturbance in the development of the individual which is to be attributed to hereditary influences. They have never found a case of erosion in an otherwise perfectly normal body, and conclude that it cannot be due to any transitory infection, but only to profound hereditary causes. Every child with erosion of the teeth should be submitted to a thorough physical examination.

Revue Mens. de Gynécologie, d'Obstétrique et de Pediatrie, Paris

April, VIII, No. 4, pp. 221-308

89 Artificial Vagina. (Création d'un vagin artificiel—opération de Baldwin.) M. Brouha.
90 Role of Corpus Luteum in Embedding and Development of Ovum. (Role du corps jaune dans la nidation et le développement de l'œuf chez la femme.) P. Puech and J. Vanverts.

Beiträge zur klinischen Chirurgie, Tübingen

May, LXXXIV, No. 2, pp. 305-497

91 Mobilization of Stomach and Duodenum during Operations. (Zur Mobilisation und Verlagerung des Magens und Duodenums bei Operationen am Magen und unteren Abschnitt der Speiseröhre.) H. Brun.
92 Ultimate Outcome of Ileosigmoidostomy. (Spätzustände nach Dickdarmausschaltung durch Enteroanastomose zwischen Ileum und Flexura sigmoidea.) B. v. Beck.
93 Intraperitoneal Injury of Urinary Passages. M. P. K. Boltjes.
94 Infectious Osteomyelitis; 320 Cases. P. Klemm.
95 Lithotomy in Both Ureters Obstructed with Stones. (Doppelseitige Ureterolithotomie bei calculöser Anurie.) A. Läwen.
96 Gastric Cancer; 612 Operative Cases 1895-1911. (Zur Chirurgie des Magencarcinoms.) W. Altschul.
97 Appendicitis Operations; 601 Cases. J. Denk.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 17, XLIII, No. 20, pp. 609-640

98 Present Status of Surgery of Vessels. (Gefässchirurgie.) F. L. Dumont.

May 24, No. 21, pp. 641-672

99 Prophylaxis of Diphtheria. (Epidemiologisches über Diphtherie. R. Klinger.

May 31, No. 22, pp. 673-704

100 The Thyroid. (Die Schilddrüse und ihre Rolle in der Pathologie.) A. Oswald.
101 Congenital Hemolytic Jaundice; 3 Cases. O. Roth.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXVI, No. 4, pp. 335-396. Last indexed May 17, p. 1584

102 *Menstrual Rise in Temperature with Pulmonary Tuberculosis. F. W. Wiese.
103 *Tubercle Bacilli in the Blood-Stream in Pulmonary Tuberculosis. J. Elsaesser.
104 Test for Albumin in the Sputum Not Reliable for Early Diagnosis of Tuberculosis. E. Hempel-Jörgensen.

102. **Menstrual Fever in the Tuberculous.**—Wiese quotes various clinicians who have noted that the temperature rises during the premenstrual period and drops during menstruation even in healthy women, all of course within normal range, but in the tuberculous it runs up above the normal limit. He has made a special study of this in 500 cases of active tuberculosis, accepting a temperature above 37.3 C. (99 F.) as abnormal. In 13.6 per cent. of the 500 women there was intramenstrual fever (10.14 per cent. in Stage I; 15.4 per cent. in Stage II; 17.9 per cent. in Stage III). There was a premenstrual rise of temperature in 40.2 per cent.; only 32.2 per cent. had a normal temperature during menstruation. A regular rise in temperature during the menstrual period, which cannot be explained otherwise, should warn of possible tuberculosis and the lungs should be examined anew. A previously silent case may give positive findings if examined during or immediately before or after menstruation. He thinks that there can be no question that abnormally high temperatures have an injurious influence and declares that tuberculous women should keep especially quiet at the time of the menses. Even with normal temperature, in the period just before menstruation the patient should spare herself as much as possible, as there is a special tendency then to congestions and exacerbations. At the slightest rise in temperature the patient should be kept in bed, with heat to the abdomen in case of pain. "Catching cold" should be guarded against with vigilant care. There is no regular type of temperature disturbances under these conditions, but menstrual fever warns that there is some disease focus somewhere in the body, and it is generally in the lungs.

103. **Tubercle Bacilli in the Blood-Stream.**—Elsaesser reviews what has been written on this subject and tabulates the results of comparative tests in forty-one cases of severe tuberculosis. The microscope showed the tubercle bacilli in 7.3 per cent. of the forty-one cases, but inoculation of animals gave constantly negative results.

Berliner klinische Wochenschrift

June 2, L, No. 22, pp. 1001-1048

105 *Cure of Cancers by Radiotherapy. (Erfolge der Röntgen- und Mesothoriumbestrahlung beim Uteruscarcinom.) E. Bumm.
106 Changes in Tissues under Radiotherapy. (Allgemeine histologische Veränderungen der Gewebe unter dem Einfluss der Strahlenwirkung.) L. Wickham. Concluded in No. 23.
107 Action of Light on the Metabolism. (Einwirkung des Lichts auf den Stoffwechsel.) L. Pincussohn.
108 Roentgenoscopy in Chronic Constipation. (Röntgenuntersuchungen bei chronischer Obstipation.) H. Strauss and S. Brandenstein.
109 Roentgenoscopy in Diagnosis of Kidney Calculi. (Die Radiographie in der Diagnostik der Nephrolithiasis.) C. Klieneberger.
110 Estimation of Viscosity of the Blood. (Kritische Untersuchungen über die Methoden der Viscosimetrie des Blutes.) M. Rothmann.
111 What is Asthma? (Zur Theorie des Bronchialasthma.) A. Ephraim.
112 Mutation of Diphtheria Bacilli. K. Baerthlein.
113 Abbott's Method of Treating Lateral Curvature of the Spine. A. Schanz.
114 *Technic for Gram Stain. (Die einfachste Gramfärbungsmethode.) T. Hausmann.
115 The Lay Press and Psychiatry. R. Cuno.

105. **New Era of Intensive Radiotherapy of Cancer.**—Bumm combines the Roentgen rays and mesothorium rays in the treatment of uterine cancer and here reports twelve cases of carcinoma of the cervix or urethra in which really remarkable results were attained with the perfected technic now available. It permits large doses without injury of the normal tissues. He was able to use doses of 10,000 Kienböck units and mesothorium doses up to 15,000 units (Milligrammstunden), and the morbid symptoms of the cancer all subsided in less than ten days. The fibers of the connective tissue undergo hyaline degeneration and become hard under these rays. We do not know whether this resulting induration destroys the cancer cells by a purely mechanical action or whether the cancer cells die from the specific action of the rays. The genital organs in women are remarkably tolerant to these rays; the bladder is more sensitive. Bumm still proclaims the superiority of surgical measures for cancer, but with recurring cancer he insists that the results of radiotherapy are actually better than those with excision, both from the subjective and the objective point of view. With inoperable genital cancer the intensive radiotherapy gives better results than any other treatment yet known. An operation on a recurrence is liable to start any cancer cells left to renewed and excessive proliferation, while exposures to the rays cause the cells to shrivel up and retrogress until a clinical cure results. He makes a point now of applying radiotherapy systematically at regular intervals after every cancer operation, and believes that the resulting induration of the connective tissue and destruction of any cancer cells left behind in microscopic metastases will materially reduce the number of recurrences in future. He adds that as we are just entering on the era of intense, deep, filtered radiotherapy of cancer, improvements in technic may bring many unhoped for surprises.

114. **Simplified Gram Stain.**—The directions for Gram's stain call for an anilin-gentian-violet solution, but Hausmann declares that the anilin is unnecessary. Equally good results are obtained with a 1 per cent. aqueous solution of ordinary commercial gentian violet. This stain is poured directly on a piece of filter paper placed over the specimen and extending a little beyond the slide. The filter paper holds back all the sediment. "Simple, good and cheap," he says.

Deutsche medizinische Wochenschrift, Berlin

May 29, XXXIX, No. 22, pp. 1025-1080

116 Technic for Obtaining Antigens. (Verwendung von-trocken erhitzten Mikroorganismen und von solchen, die mit verdauenden Fermenten behandelt sind, als Antigene, unter bes. Berücksichtigung dc [illegible] F. Loeffler. [illegible] en.) K. (Antigene Wirkung der [illegible] Momose.

117 Tuberculosis Mortality in Baden. E. G. Dresel.
118 Fission Forms of Spirochetes. (Teilungsformen der reingezüchteten Syphilisspirochäten.) H. Nakano.
119 Operative Treatment of Flat-Foot and Talipes. M. Wilms.
120 Auricle Pulse and Venous Pulse. (Vorhofpuls und Venenpuls.) E. Rautenberg.
121 Significance of Findings in the Cerebrospinal Fluid and Blood Serum for Neurology. D. M. Kaplan (New York).
122 *Cure of Uterine Cancer after Exploratory Curetting. (Heilung eines Falles von Carcinoma uteri nach Probeauskratzung.) T. Hess and D. v. Hansemann.
123 Bacteriologic Examination of Fasting Stomach. E. Fränkel.
124 Efficacy of Mesothorium Radiotherapy in Hemorrhagic Uterine Disease and Myomas. A. Pinkuss.
125 Scraping and Resection of Tip of the Root of Tooth without Disturbing the Tooth Above. (Zahnwurzelspitzenresektion.) E. Schottländer.

122. Complete Recovery from Uterine Cancer after Curetting.—Hess reports a case in which the general symptoms and microscopic examination of the scrapings indicated malignant disease of the uterus in a woman of 41. As her sister had died after an operation for uterine cancer, she refused to permit any further operative measures after the exploratory curetting. Recent reexamination four years later showed her in perfect health. The uterus seems entirely normal. Hess, and after him Hansemann, discuss the case as to the apparent cure under the curetting alone, and Hansemann thinks there can be no doubt that the curet happened in this instance to scrape out every cancerous cell so that there was nothing left to continue the malignant disease. He has encountered a similar case in a girl of 17; microscopic examination showed carcinoma; in the first case the findings were those of an adenocarcinoma. The curetting in each had evidently scraped out all the anarchistic cells, and there was no further malignant disease. But he warns that this is so unlikely to occur, that these two cases should not be used as an argument against radical removal of a uterine cancer as soon as the microscope reveals its nature.

Medizinische Klinik, Berlin

May 25, IX, No. 21, pp. 817-856 and Supplement

126 Tonsillotomy or Tonsillectomy? A. Kuttner.
127 *Differential Diagnosis of Hemorrhage from Tubal or Uterine Abortion. H. Füth.
128 *Tuberculous Lesions of the Eyes. (Die tuberkulösen Erkrankungen des Auges.) H. Lauber.
129 Radiotherapy. (Die Therapie mit radioaktiven Stoffen.) P. Lazarus.
130 *Fat Embolism in the Brain. Weber.
131 *Chronic Ptomain Poisoning from Hotel Fare. (Die chronischen Nahrungsmittelvergiftungen in Kurorten.) P. Schrumpf.
132 Experiments with Organic Preparations of Mercury. IV. W. Kolle and Rothermundt.
133 Iodin-Ether Test for Bile Pigments in Urine and Blood. (Nachweis von Gallenfarbstoffen im Urin und Blut mittels Jod-Aether.) Pakuscher and Gutmann.
134 *Thyroid Disease. (Fortschritte in der Klinik der Schilddrüsenerkrankungen.) J. Bauer.

127. Differential Diagnosis of Hemorrhage from Uterine or Extra-Uterine Abortion.—Füth emphasizes the necessity for differentiation as if the uterus is curetted this is liable to cause the tube to rupture and serious consequences may result for which the needless curetting of the "innocent bystander," the uterus, was directly responsible. He has encountered three cases of the kind; the curetting was followed by development of a retro-uterine hematocele which became infected in two of the cases. In a fourth case the tubal pregnancy continued its course notwithstanding the curetting of the uterus. At the operation the fifth month the amniotic fluid was discolored and the patient succumbed to peritonitis. In a fifth case there were slight hemorrhages and severe pains soon after a menstrual period, recurring in a mild form during two weeks and then becoming more severe and accompanied by nausea. The uterus was curetted twenty-three days after the first symptoms; three days later came sudden intense pain and syncope and for two weeks the pains were so severe that morphin was required. Then a hematocele was palpated in the right tube region and a laparotomy disclosed blood among the loops of intestines. To avoid such mistakes it is necessary to scrutinize the previous history with extreme care. Especially significant is a history of gonorrhea or of a febrile abortion or delivery. In many cases there is a history of prolonged sterility, testifying to the obstruction of the tubes. With an extra-uterine pregnancy there are generally less of the subjective disturbances of pregnancy, while local pain is often an early symptom. If the patient has had pain before from local inflammatory processes, it usually becomes more severe after the embedding of the ovum in the tube. Especially significant is pain deep in the pelvis on the right or left side. The uterus is liable to feel soft and large with both normal and extra-uterine pregnancies, but distinct discoloration of the vaginal mucosa speaks rather for the normal site. The pregnant tube may be hidden behind an ovarian cyst, as in a case described. With positive findings, on both sides, the probabilities are against extra-uterine pregnancy. Even with a recent pyosalpinx there may be protracted hemorrhage. In Füth's 313 cases of incomplete abortion last year, there were seventy-one patients whose last menstruation had occurred less than two months before and the abnormal hemorrhage appeared in one case at two and a half weeks; four times after four weeks, three times at four and a half weeks, and in all the rest after a period of five or five and a half weeks. When the hemorrhage occurs at the regular time for menstruation intra-uterine abortion can generally be excluded. Uterine abortion generally occurs all at once; a protracted course is rare. Tubal pregnancy is probably far more frequent than generally recognized, often running a symptomless course. Rapid coagulation of the blood speaks for a fresh source for the bleeding as in an intra-uterine abortion; the blood in protracted slight bleeding, as from an extra-uterine pregnancy, seldom shows much coagulation; the color of the blood is also dark. Sonnenfeld advises in dubious cases to curet the uterus tentatively under general anesthesia, and, if the findings are negative, to open the abdomen at once.

128. Tuberculous Disease of the Eyes.—Lauber advocates tuberculin treatment in case of tuberculous ocular affections, having found it useful in his experience in conjunction with other measures. Fifteen of the fifty-two patients given tuberculin treatment were cured and twenty-four much improved while only eight failed to show any benefit from it. He relates the details of two cases to illustrate the advantages of specific treatment. His experience indicates that tuberculosis is one of the most frequent causes of eye disease, but it rarely affects the eye first. Younger patients respond better to the tuberculin than the elderly, possibly merely because the tuberculosis is of longer standing in the latter.

130. Fat Embolism of the Brain.—Weber's patient was a robust young man who had both femurs broken in the caving in of a mine. There was little shock and he seemed to be doing well for twenty-four hours; then he became somnolent and succumbed in coma the third day. Autopsy revealed the cerebral form of fat embolism. The young man had dragged himself some distance from the scene of the accident to give the alarm for four buried mates, and he was taken by train to a hospital in town. Weber draws the lesson from the case that after any fracture all manipulation and transportation of the injured should be reduced to the minimum, for fear of inducing fat embolism; it is better to refrain even from changing the dressings too often and in lifting and carrying the injured there should be as little shaking up as possible to avoid favoring absorption of fat from the site of the lesion. He has known of instances in which the cerebral symptoms developed during or shortly after the patient had been moved.

131. Chronic Intoxication from Hotel Fare.—Schrumpf's warnings are addressed particularly to the proprietors of hotels at health resorts, but they apply to all hotels. He insists that fish should not be served in inland hotels during the warm weather, as it is generally impossible to keep them in good condition and subacute or chronic ptomain poisoning is liable to result. Asparagus, canned goods and beans are also liable to cause ptomain poisoning unless in the best condition. Cooks may disguise with high seasoning or a sauce piquante articles whose condition tends to be dubious. Classic ptomain poisoning is rare, but the continuous ingestion of minute amounts of ptomains is liable to entail a series of symptoms which may puzzle the physician; they may occur in the form of loss of appetite, hyperacidity, flatulency and constipation, or as palpitations, vasomotor disturbances and dizziness, or as slight fluctuations in temperature, or as nervous restlessness, headache, insomnia, depression and precordial distress. The symptoms of subacute or chronic ptomain poisoning are most liable to develop in the nervous, in those accustomed to a simple, hygienic, fresh diet at home, and in those especially susceptible to ptomains or with insufficiency of the kidneys, latent or patent. He warns in conclusion that the more the menu inclines to dishes with highly seasoned sauces, the more suspicious it is of ptomains. Small hotels should shorten their menus and give only fresh material; the expense of the latter may be prohibitive with an elaborate menu except to the highest priced houses.

134. **Disease of the Thyroid.**—Bauer reviews the progress in recent years in our knowledge of disease of the thyroid, commenting on the remarkable results obtained in the disturbances resulting from deficient secretion in the thyroid. Severe mental defects and disturbances in hearing may prove refractory as the lesions responsible for them are irreparable; they may have developed in intra-uterine existence. The treatment of disturbances resulting from excessive or perverted thyroid functioning form a debatable ground, the opinions of internists, surgeons and roentgenologists differing widely. He thinks the reason for these conflicting views is that the primary cause and the different clinical course of the various forms of hyperthyroid intoxication are regarded with too little discrimination so that no attempt is made to differentiate them beyond distinguishing between pronounced exophthalmic goiter and its rudimentary forms. Bauer insists that the distinction between the nervous and the genuine thyrotoxicosis is very important. In particular the thyroid neuroses, Stern's basedowoid, must be strictly distinguished from the other groups. Operative treatment in these cases is illogical from the theoretical standpoint and disastrous from the practical. Chvostek declares that in these cases as well as in mild cases of true exophthalmic goiter in which there is a nervous predisposition, operative measures are not only useless but may be directly harmful as severe nervous after-effects are not unusual. On the other hand, with the genuine form of exophthalmic goiter, operative treatment is certainly the most rational and most radical of all measures, as also in iodin Basedow, rebellious to prolonged internal treatment. The operation of choice is unilateral thyroidectomy and most surgeons advocate operative treatment without delay before the heart has become seriously injured. According to the statistics collected by Klöse, operative treatment has given 85 per cent. cures, in comparison with only 10 per cent. with medical measures. Next in importance is repose for the patients, getting them out of their ordinary environment; a trip to an altitude of about 3,600 feet is often very favorable, starting first at 1,500 feet. The patient should be well nourished, perferably with a carbohydrate-fat mixed diet. Galvanic stimulation of the neck is often useful, the anode on the sternum, the cathode behind the angle of the jaw, slowly turning on a current of 1 or 2 milliamperes for from one to three minutes and then slowly turning it off. Or the current may be sent through the thyroid. Mild hydriatic procedures may be useful adjuvants, but drugs are not needed although phosphorus, arsenic, quinin and bromids have been recommended. Iodin should be avoided with goiter of any type. The adhesions that develop after radiotherapy interfere with operative treatment later.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXVI, No. 2, pp. 197-378. *Last indexed May 31, p. 1750*

135 *Functioning of Transplanted Kidneys. (Funktionsprüfungen an transplantierten Nieren.) W. Lobenhoffer.
136 *Action of Gastric Juice on Intestine Implants. (Zur Frage des Verhaltens des Darmes gegenüber der Verdauungstätigkeit des Magensaftes.) P. Fiori.
137 *Mechanical Importance of the Bronchi. (Mechanische Bedeutung der Bronchien.) N. P. Tendeloo.
138 *Internal Treatment for Gastric Ulcer with Retention. (Ergebnisse der internen Behandlung von Ulcus ventriculi—sive duodeni—mit Stauungsinsufficienz.) K. Petren, K. Lewenhagen and J. Thorling.
139 Experimental Immunization against Necrosis of the Pancreas. (Zur Frage der Immunität gegen Pankreasnekrose.) H. Joseph and J. Pringsheim.
140 Roentgenoscopy of Chronic Gastric Ulcer; Stomach Inflated. (Das chronische Magenulcus im Röntgenbilde des luftgeblähten Magens.) W. Röpke.
141 Experimental Research on Appendicitis. (Ueber die Entstehung der Entzündungen am Blinddarmanhang auf bakteriologischer und experimenteller Grundlage.) B. Heile.

135. **Functioning of Transplanted Kidneys.**—The results of Lobenhoffer's experiments on forty dogs show that a kidney transplanted elsewhere in the same animal not only is capable of normal functioning but stands successfully extraordinary functional demands on it. The finest morphologic structures evidently persisted unimpaired and normal secretion continued. For this, however, it is necessary to retain the nerve supply of the kidney intact. The kidney was twisted around to the rear of the spleen and sutured to the pedicle of the latter and its severed vessels were sutured to the central stumps of the vessels of the spleen. The other kidney was then removed a week or so later, throwing all the work on the transplanted kidney. It continued to secrete urine and otherwise function normally even under supreme tests with excessive intake of water or salt, milk sugar or phloridzin. The literature on the subject of transplanting kidneys is reviewed.

136. **Action of Gastric Juice on Intestine Implants**—Fiori cut out a segment of the stomach and interposed in its place a segment cut from the intestine to study the behavior of the intestine under the direct action of the gastric juice. The intestinal wall showed no signs of injury and maintained its noble elements intact. The experiments were made on three large dogs.

137. **Mechanical Importance of the Bronchi.**—Tendeloo gives illustrations of analogous mechanical conditions to show how the bronchi drag on and stretch the lung tissue, and vice versa.

138. **Internal Treatment for Gastric Ulcer with Retention.**—Petren and his coworkers here analyze the immediate and ultimate outcome in twelve cases of gastric or duodenal ulcer with considerable delay in the evacuation of the stomach. Treatment had been exclusively medical although invisible blood had been found in the stools once or more before the treatment, and there were evidences that the stenosis of the pylorus was of an organic nature and not mere spasmodic contracture. The cases confirm almost beyond question the possibility that a course of internal treatment may lead to a permanent cure even when the peptic ulcer is accompanied by stenosis of the pylorus from organic obstruction. He thinks that we are too ready to accept the assumption that stenosis of the pylorus is of spasmodic character if it subsides under treatment. In reality, a spasmodic stenosis should be suspected only when the retention is decidedly irregular, marked on one occasion and no signs of it at another. An ulcer in the vicinity of the pylorus is liable to cause its obstruction before cicatricial stenosis has developed. If there is already cicatricial stenosis then naturally internal treatment is futile. Treatment of the retention should therefore be the same as for an ordinary gastric ulcer except that it may be necessary to rinse out the stomach every evening to give it a chance to rest during the night. Oil is another important adjuvant in these cases; he generally gave a tablespoonful of oil three times a day at first and then two tablespoonfuls, or poured it into the stomach once a day in the dose of 100 c.c. The oil reduces the tendency to spasm, supplies nourishment, reduces friction and has a depressing influence on the secretion of acid. He adds that it is impossible to determine whether there is established cicatricial stenosis or not, and gastric ulcer with pronounced retention should be given a systematic internal course of treatment as a routine procedure, except when complications compel operative measures from the start. Medical measures can be regarded as successful only when at the close of the course there is no retention or only a very slight tendency thereto; mere improvement is not enough. In his twelve cases five of

the patients were entirely cured by the internal treatment; one other patient had a recurrence of the ulcer three years afterward but without retention of stomach content then or for nearly four years afterward. Quite recently stenosis of the pylorus developed anew and an operation has been performed. In another case the patient had three recurrences of the ulceration but with scarcely any retention during the more than four years she has been under observation. This case demonstrates anew how the motor disturbances can disappear for years under medical measures alone, although the ulcer itself has probably never been entirely cured.

Münchener medizinische Wochenschrift

May 27, LX, No. 21, pp. 1129-1184

142 Lymphocytosis Common in Diabetes, Exophthalmic Goiter, Asthenia and Neuropathies. R. v. Hoesslin. Concluded in No. 22.
143 *Fee-Splitting. (Dichotomie unter Aerzten.) M. Nassauer.
144 *Ivory Elbow. (Erfolgreiche Gelenkplastik am Ellbogen durch Implantation einer Elfenbeinprothese.) F. König.
145 Appearance of Ferments in the Serum Five Minutes after Parenteral Injection of Serum. (Auftreten von Fermenten im Tier- und Menschenkörper nach parenteraler Zufuhr von art- und individuumeigenem Serum.) T. Petri.
146 Serodiagnosis in Ophthalmology. (Zur Anwendung des Dialysierverfahrens nach Abderhalden in der Augenheilkunde.) C. A. Hegner.
147 Reliability of Serodiagnosis of Pregnancy. (Zur biologischen Diagnose der Schwangerschaft mittels der optischen Methode und des Dialysierverfahrens.) W. Rübsamen.
148 Erythema Nodosum and Tuberculosis. E. Moro.
149 Pernicious Anemia of Syphilitic Origin. J. Weicksel.
150 Lesion of the Styloid Process of the Ulna; Two Cases. (Eigentümliche, typische Deformierung des Griffelfortsatzes der Ulna.) A. Reichart.
151 Lead Poisoning of Infant from Rubber Sheeting Used in its Crib. (Bleivergiftung durch ein Gummituch.) Frank.

143. **Fee-Splitting.**—Nassauer's address at a recent meeting of the Munich Aerztl. Bezirksverein was followed by the adoption of resolutions denouncing and penalizing the offering or the acceptance of a reward for referring cases, and stating further that the attending physician must himself send a bill to the patient for all his work. Nassauer emphasized in particular the necessity for educating the public to appreciate at its just value the skill of the internist in diagnosing the affection for which he calls in the surgeon; at present the public is inclined to overestimate the surgeon's share in the work and underestimate that of the internist. Another necessity to which he calls attention is that of training students in ethics in general, and especially those destined to a medical career. The best means to put an end to dichotomy, however, is to educate the public to appreciate at its just value the work of the physician who does the diagnosing and decides on the indications in the case.

144. **Ivory Implant for Restoration of Joint.**—König states that his two patients with ivory prosthesis after removal of the jaw can use them for apparently normal functioning of the jaw, chewing, etc., with no impairment of function during the two years since. Sudek has also had a similar success. Encouraged by these results, König has applied the same principle in treatment of the elbow after resection of the lower part of the humerus in a woman of 26, on account of a spindle-celled sarcoma. He gives an illustrated description of the case and states that the ivory healed in place without a fistula or swelling or pain and the joint is firm. The woman now, a year later, can lift easily a pail half full of water. The arm can be extended to 135 degrees and flexed to 85; rotation is free.

Therapeutische Monatshefte, Berlin

June, XXVII, No. 6, pp. 401-468

152 Sanatorium Treatment of Pulmonary Tuberculosis. (Ergebnisse der Heilstättenbehandlung in Volksheilstätten.) H. Grau.
153 *Influence of Opium on Stomach and Intestines. (Einfluss des Opiums und seiner Derivate auf die motorische Funktion des normalen menschlichen Magendarmkanals.) M. Zehbe.
154 Expectant Management of Labor. (Abwartende Geburtsleitung.) J. Voigt.
155 Calcium Bromid in Treatment of Laryngospasm and Tetany. B. Grünfelder.
156 Connection between Bronchitis after Ether Anesthesia and the Oxidation Products of Ether. R. B. Smith (Hamilton, N. Y.).
157 *Serotherapy of Scarlet Fever. (Zur Behandlung des Scharlachs mit Rekonvaleszentenserum.) E. Reiss.

152. **What Have the Wage-Earners' Sanatoriums in Germany Accomplished?**—Grau confesses that the restoration of the wage-earning capacity in the insured tuberculous wage-earners given a course at a sanatorium has not come up to the expectations when the sanatorium system was established fifteen or eighteen years ago by the government-aided, sickness insurance companies. The training of the public in hygiene and the spreading among physicians of the knowledge of the effectual factors for the fight against tuberculosis are important results of the sanatorium movement, but these cannot be expressed in statistics. The present trend is to restrict the sanatorium course exclusively to patients with active tuberculosis promising permanent restoration of the earning capacity. A certain proportion of such cases might terminate in spontaneous recovery even without the sanatorium course, but this objection would apply to any method of treatment in any disease. On the whole, he states, about 50 per cent. of all the persons given sanatorium treatment to date in the non-private sanatoriums of Germany regained full earning capacity for at least from five to ten years. But, he adds, we have no means of knowing what percentage of tuberculous persons under similar conditions, but without sanatorium treatment, would show full earning capacity after this same period. More illuminating is the comparison between those who took a full sanatorium course and those who voluntarily left the sanatorium without completing the course. Köhler found that after six years only 29.1 per cent. had died of those who had completed the course and 44.7 per cent. of those who broke it off; 61.7 per cent. of the first group had regained full earning capacity after two years and 51.7 per cent. still retained it at the end of six years, while 51.1 per cent. of the other group had full earning capacity after two years but only 25.4 per cent. after six years. The statistics from eight sanatoriums covering from one to three years show that 30.6 per cent. of 2,615 patients had lost the bacilli in the sputum by the close of the course, and 65.5 per cent. had normal temperature out of 1,096 febrile cases at five sanatoriums. Grau says that of the 9,296 tuberculous insured sent to the sanatoriums for treatment during 1910, from 5 to 10 per cent. proved not to have tuberculosis. At present, these people's sanatoriums have a total of 14,079 beds at their disposal. He emphasizes that the conditions into which the wage-earner returns on completion of his course, the poor food, the exposure to dust, the physical exertion, etc., are a tremendous strain on the healed lesions so that estimation of the effect of the sanatorium treatment six years before is often a difficult matter.

153. **Influence of Opium and Its Derivatives on the Motor Functioning of the Intestines.**—Zehbe reports roentgenoscopic research on normal individuals given twenty drops of tincture of opium or one of its derivatives fifteen minutes before an ordinary meal. The depressing influence of the drug on the motor functioning was most marked for the large intestine and least for the stomach.

157. **Serotherapy of Scarlet Fever.**—Reiss does not approve of commercial serums for this purpose; he urges the preparation of the serum on the spot in the laboratory connected with the scarlet fever ward of a public hospital. He has applied the method in forty severe and extremely severe cases of scarlet fever, including several children who seemed moribund. A sudden and complete transformation of the disease followed, convincing the most skeptical of the advantages of the serotherapy. The serum from at least three scarlet fever patients at the third or fourth week of the disease was mixed, and after adding 5 drops of a 5 per cent. solution of phenol to each 50 c.c., the ampulla was fused and kept on ice. The serum from each donor was tested for the Wassermann reaction and bacterial content beforehand. The dose for the serotherapy was 50 c.c. for a child and 100 c.c. for an adult, injected into a vein.

the consecutive parotitis as tropical enteritis stands to suppuration in the liver. By intensive disinfection of the pharynx and mouth of Stenson's duct it seems to be possible to ward off the parotitis.

Hospitalstidende, Copenhagen

May 28, LVI, No. 22, pp. 593-632

184 *Two Symptoms of Chronic Interstitial Nephritis, and Salt as a Factor in them. (Om to Symptomer ved granulær Nefritis og saltfattig Kosts Betydning for dem.) V. Rubow.
185 Aberrant Ureters in Women. (Om extravesikal Udmunding af Ureter hos Kvinden.) I. P. Hartmann. Commenced in No. 21.

June 4, No. 23, pp. 633-656

186. Serodiagnosis of Syphilis. (Undersøgelser over en Modifikation af Herman-Perutz' Reaktion.) W. Leschly and H. Boas.

June 11, No. 24, pp. 657-680

187 Pathogenesis of Myopia. (Bemærkninger om Myopiens Patogenese i Tilslutning til et Forsøg paa en Statistik med Hensyn til øjets Refraktion efter det 25. Aar.) J. Bjerrum. Commenced in No. 23.

184. **Two Symptoms of Chronic Interstitial Nephritis, and Salt as a Contributing Factor.**—Rubow remarks that disturbance in one organ may manifest itself first in some other organ, and that this is most liable to occur with contracted kidney, the heart being the first to show that something is wrong. The assumption is inevitable that the heart is the organ at fault, and this is the more plausible as the three cardinal symptoms of granular degeneration of the kidney, enlargement of the heart, high blood-pressure and albuminuria, may be imperceptible or inconstant. In thirty-four patients with contracted kidney of this heart type, the lowest blood-pressure was 170 mm. mercury, and in twenty-two cases it was 200 mm. or over; albuminuria was constant except when the patients kept in bed for a few days; all were over 30, and twenty-four were between 50 and 80. All but nine were men. Symptoms typical of nephritis were rare and inconstant, ut in no less than twenty-seven of the cases the first sign of rouble was dyspnea; in the seven other cases it was pain in the heart region or some other nervous symptom, headache or exhaustion; four of the seven women had these nervous disturbances as the first sign of anything wrong. The dyspnea in twenty others resembled that of failing compensation with a valvular defect, while in seven cases it occurred in a paroxysmal form, sometimes suggesting edema of the lungs. Fifteen of the patients had had this recurring dyspnea for two and five for over five years. When no signs of a valvular defect can be discovered, this dyspnea is strong presumptive evidence of chronic interstitial nephritis. The daily output of urine was below the normal figure, from 550 to 980 c.c. in thirteen, and from 1,020 to 1,670 in eighteen. In only four did it reach 2,040 to 2,300, and this only for a brief period. Accepting 1,600 c.c. as the normal figure, we see that the diuresis was below instead of above normal in his cases in twenty-nine, and ranged from 1,670 to 2,300 in the five others. The text-books state that the quantity of urine is above normal with contracted kidney, but Rubow's experience contradicts this, as it also contradicts the assertions that the progress of the disease is often unmarked by symptoms until those of uremia indicate the beginning of the end. The respiratory and nervous symptoms above described are pregnant with meaning for those who realize what they portend. Persons with the polyuric form of contracted kidney are abnormally sensitive to salt, and their diuresis can be increased or lowered by salting the food. The total and proportional output of salt in the urine is greater at night than in the day, contrary to what is observed in health, and the diuresis is increased at night. With parenchymatous nephritis, salted food reduces the diuresis and starts edema, but the shrunken kidney reacts with increased diuresis. He advises to restrict the amount of salt as salt brings thirst and this leads to drinking more fluid than necessary; this imposes unnecessary work on the heart which is often below par with chronic interstitial nephritis. Thirst also tempts to liquor drinking; he remarks that the free-lunch saloons in America give highly salted food for this reason. In addition to this injurious influence in kidney disease, salt has the further bad feature of fostering drinking. Its use is an artificial acquired taste and custom.

Norsk Magazin for Lægevidenskaben, Christiania

June, LXXIV, No. 6, pp. 739-880 and Supplement

188 *Various Types of Fracture of the Ankle. (Fractura marginalis posterior tibia og andre bruddkomplikationer ved ankelbrudd.) N. B. Grøndahl.
189 Case of Fracture of the Radius. P. E. Giertsen.
190 Research on the Motor and Secretory Functioning of the Stomach in Nineteen Healthy Adults. H. F. Høst.
191 *Experiences with Tuberculin Treatment of Pulmonary Tuberculosis. (Tuberkulinterapien.) A. Tillisch.
192 Gout. (Gigtens patogenese og dens diætetiske behandling.) V. Furst.
193 *Research on Regeneration of Nerves. P. B. Henriksen.

188. **Fracture of the Ankle.**—Grøndahl gives twenty-seven illustrations of the various types of fracture encountered in twelve or more cases, with special emphasis on the fractures complicated by fracture of the posterior margin of the radius. The latter is liable to be overlooked.

191. **Tuberculin in Pulmonary Tuberculosis.**—Tillisch gives the minute details of his method of individualizing the dosage to ensure the maximum immunity to the toxin and local reaction without injury to the organism as a whole. He has frequently witnessed the subsidence under tuberculin treatment of old rheumatic pains, which he thinks testifies that these supposed rheumatic affections were in reality the work of the tuberculosis toxins. Dyspepsia is also liable to disappear in the same way. In one case of subfebrile phthisis which had dragged along for a few years with digestive disturbances and loss of appetite, conditions in these respects returned to normal during the tuberculin treatment. Then the tuberculin was suspended for a time and the temperature ran up again and the dyspepsia returned, all subsiding again on resumption of the tuberculin. These favorable results are directly dependent on proper dosage, neither too much nor too little. Tuberculin treatment is of no use, he thinks, in acute tuberculosis; the body is already flooded with substances of this nature and it is worse than folly to add to the amount, as also in disseminated tuberculosis with much exudation and numerous large foci in the lungs. The temperature in this group is very unstable, while the susceptibility to tuberculin is extremely high. The field of tuberculin treatment is in the more torpid forms in which the process seems nearly stationary from month to month. In the incipient cases which are not very favorably influenced by sanatorium treatment, he has found a course of tuberculin often evidently the one thing needed to complete the cure. In the cases of masked tuberculosis also, tuberculin treatment may prove of the greatest benefit. Of his ninety-one patients given systematic tuberculin treatment, eighteen were in the first, thirty-six in the second stage and thirty-seven in the third, and over 50 per cent. lost the bacilli from the sputum, including seven of the nine in the first stage, seventeen of the twenty-seven in the second stage, and ten of the thirty-four in the third stage. Eight patients were given prolonged dispensary tuberculin treatment while keeping at work all the time after a course of sanatorium treatment. All now are clinically cured. This, he declares, is the most fruitful field for tuberculin treatment—one or two injections a month systematically kept up after a fresh-air course. He warns decidedly against commencing dispensary tuberculin treatment from the first without the preliminary sanatorium experience.

193. **Regeneration of the Nerves.**—Sixteen full-page plates, all colored but two, accompany Henriksen's fifty-page description of his experimental and clinical research. He severed the peroneus nerve without displacing it in thirty rabbits and then sutured the skin over it. The ends of the stumps were then resected from two to seventy-five days afterward and sections stained to trace the processes of regeneration. They seemed always to start in the nuclei of the neurilemma in both stumps but proceeded most rapidly in the central stump, the result being new nerve fibers which finally meet and coalesce.

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THE QUALIFICATIONS OF THE SURGEON *

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Almost incredible progress has been made in surgery during this wondrous age. The amplification of its uses would be a source of consternation even to our immediate forefathers.

The ever-widening scope of diseased conditions amenable to the beneficences of surgery has brought into requisition a large number of men and a high degree of excellence. No vocation, in fact, demands a higher type of endowment than that of the surgeon.

Can there be any more brilliant achievement than the conquering of the inveterate sufferings, the fatal wounds, or the deadly diseases that lie ensconced in the intricate and almost inaccessible recesses of the human body? It is a hazardous invasion and requires the utmost skill and intrepidity. Any man who has the capabilities and varied faculties that go to make a successful surgeon could so much more easily succeed in some other avocations. He must be a great scientist and a great student whose studentship must continue. Finney has well said: "The science of surgery will always overshadow the art, and unless one is well-grounded in the principles of true scientific surgery, it must degenerate into something of a trade or a sort of sleight-of-hand performance." When the arduous scientific side is mastered, the surgeon must also become a great artist. In pure art all that is essential is the spark of genius. Application does the rest. The surgeon in addition to being a scientist must needs be a highly trained technician. Above all there should be the great heart and impulses of the man.

Celsus, the illustrious Roman, declared that a surgeon should have a firm and steady hand, a keen eye, and the most unflinching courage, which can disregard alike the sight of blood and the cries of the patient. This applied to the physical and temperamental needs of the man during the infliction of great pain on the conscious patient.

Now we have blessed anesthesia by which "the fiercest extremity of suffering has been steeped in the waters of oblivion and the deepest furrow in the knotted brow of agony, has been smoothed away forever." (Oliver Wendell Holmes.) Surgery is concerned not only with grave wounds and injuries, but with myriads of diseased conditions, from those of the new-born babe to those of extreme old age. Women and children are especially in need of its beneficences. The surgeon should, therefore, be a man of the broadest and tenderest sympathies, and one whose kindliness and gentleness are unfailing. "Be ye wise as serpents, gentle as doves." The era of extreme delicacy in the handling of tissues and gentleness of manipulation has come. These are perhaps after all the most important principles of anociassociation.

Can any one fathom the responsibilities of the surgeon? There is scarcely a time in his busy life when he is not confronted with some exceedingly disquieting and all-absorbing case, and no long space of time but measures some appalling disaster that embitters the great service to which his life is consecrated. That great and sound man, Maurice Richardson, whose recent death has bereaved not only New England, but the entire guild of surgeons throughout the world, measured up more than any man of his time to the enormous responsibilities of a surgeon's life. He said in all sincerity:

> The surgeon reviewing his active years of practice cannot but be impressed by the responsibilities of his profession. He recalls the frequent misgivings with which, on the strength of his fallible opinion, he has advised and performed operations; the excitement of a critical operation and the deep breath of thankfulness when he has succeeded in averting some grave complication; his forebodings become realities; the too often useless struggle against overwhelming odds; the distressful death; the severe self-criticism and biting regrets. And is not the surgeon, appreciating his own unfitness in spite of years of devotion, in the position to condemn those who lightly take up such burdens without preparation and too often without conscience?

The first great requirement of the surgeon is a conscience. It should be his constant mentor and the great arbiter of those momentous decisions which come daily to those who combat disease and death and whose efforts are so far-reaching in the preservation of life and in the science of humanity.

In no spirit of vaingloriousness be it said that American surgery at its best represents the very highest type of that art in the civilized world. The surgeons of this country, who are in their prime to-day, represent the pioneers of the new surgery. They are the first generation of men who were educated in the antiseptic era. Their experience has been unprecedented. Much of the newer work has been created by them and has practically all been evolved since their student days. They have been pathfinders. They have had all of the hardships of the early settler. Ambition, resourcefulness, hardihood, adaptation and a devotion worthy of their great calling have made of the active and seasoned men of to-day the brilliant, but practical, intrepid and cautious American surgeons. Taught in the hard school of experience, is it not the duty of this courageous band to plan for the education of the future surgeon? Has not the time come in the evolution of our art when certain requirements should be made; certain qualifications demanded; certain training prescribed to the end that loftier ideals may be established, more perfected and efficient work accomplished and for the fame of American surgery an inextinguishable lamp be lighted?

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* The Oration on Surgery read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June 18, 1913

There is no denying that much of the surgery being done is extremely ill-advised and miserably executed. I am keenly alive to my own shortcomings, and in spite of a fair degree of opportunity and a number of years of more or less diligence, realize how far short I fall of the ideals herein to be expressed. My house is one of such complete transparency that I hesitate to cast a stone. The criticisms, however, are intended as purely constructive.

The increased amount of operative work at this day and the ready acquiescence of individuals who know what has been accomplished enables many general practitioners untrained in surgery and many young men without the leavening experience of general practice to essay the perilous rôle of the surgeon.

Hospitals make the same preparation for all operators alike. With aseptic precautions and rubber gloves many men are able to invade the abdominal cavity and tissues within the body without actually destroying the life of the patient. The mortality, while very much greater than it should be, is not absolutely forbidding, but the morbidity is really incalculable and the results are often valueless if not permanently disabling. Comparatively benign invasion of structures is only the beginning of surgery. Any house surgeon should be able to do this. Cure with a minimum of risk and a maximum of results should be the end and aim. As Finney has said "None knows better than the experienced surgeon how far-reaching are the possibilities for good or evil lurking behind every surgical procedure." Therefore, the indication should be exceedingly clear, the need great and all of the safeguarding and exacting conditions fulfilled. The unnecessary operation is the crying shame of present-day surgery. These are performed by the operator, not by the surgeon. There is a vast distinction between an operator and a surgeon. There are many of the former but few of the latter class, comprehending as it does men of saneness, probity and judgment. How difficult is the acquisition of surgical judgment! Judgment is the queen of mental attributes in the ordinary affairs of life; but how all-important and responsible is the exercise of that judgment, even if acquired, when brought to bear on the health, the limb and life that is so trustingly and confidently placed in the hands of that man who alone can restore it!

Would that another Senn could arise and rebuke us for our furore to do surgery. It would indeed require the stentorian voice of a great leader to stem the tide of the unnecessary surgical operations of our day. Is it not a castigation when a humorous periodical says, "If you go to the doctor's office sufficiently often, you will be operated on?" This is the result of many contributing factors; bad judgment, inexperience, an overweening desire to do surgery, the ease and facility with which all of the drudgery can be avoided in the hospital, the surgical exploitation of the neurasthenic and, lastly, let it be sorrowfully said, the commercial spirit which has raised its hydra head in all its monstrousness among us. Would that it could be cast out! It must be! yea, it will be, and largely by the individual and united efforts of the members of the Section on Surgery of the American Medical Association.

Nebraska has passed a law making it a penal offence for a commission to be offered or accepted, or for fee-splitting to be practiced in any form. Every state should have such a law, unless the profession can clean its Augean stables within its own ranks.

The most dangerous operator is not the enthusiastic beginner, because he will learn; not the antiquated back number, because he will die; but it is the occasional operator, the general practitioner without special training and the young man whose only preparation consists in the ordinary undergraduate work of the average medical college.

As the Nestor of surgery in this country, Halstead, that great teacher, has said, in his memorable address on "The Training of the Surgeon," the interne "suffers not only from inexperience, but also from overexperience. He has in his short term of service responsibilities which are too great for him; he becomes accustomed to act without preparation and acquires a confidence in himself and a self-complacency which may be useful in times of emergency, but which tend to blind him to his inadequacy and to warp his career."

Unfortunately, a great deal of serious surgery is attempted by men with the most meager opportunities and the frailest ability. It is as cheap to prepare to be this kind of a surgeon as to follow any other line of medicine and it is attractive not only to the purely ambitious, but to the avaricious. It is not a question of the patient's well-being, but the commercial value of the patient; one might almost say the commercial value of human life.

It is an exceedingly difficult matter for any one of us to appreciate our limitations. Is it not a fact that the surgeon in one field who takes cases in a remote field with which he is not familiar is more guilty than the practitioner who occasionally does some simple form of surgery, although not quite so well trained to do it as the surgical specialist?

Dr. Stuart McGuire has said, "No conscientious surgeon should undertake an operation without asking himself whether he has the skill to do the work satisfactorily."

The great middle class are the greatest sufferers from surgical delinquencies. The poor are safeguarded by their poverty, which necessitates their going to the charity clinics. These are as a rule competently manned. The rich are protected by their knowledge and cultivated habit of seeking the best. It is the large middle class, who are able to pay moderately for what they get and who think one doctor is about as good as another, that get the most indifferent service.

The multiplication of the small hospitals in the smaller cities and towns has undoubtedly ministered to many sufferers in a satisfactory manner. After all, the size of the town does not matter, but the size of the man does. If one man in a community can by natural aptitude, innate ability and good training establish or be put at the head of a well-ordered hospital, the character of the work will be high. Such a man will command the cooperation of his confréres. It is a distinct mistake, however, to encourage four or five men in a town where there are from six to twelve practitioners to believe that each one can do the surgery that may come to him. They do not or cannot have a sufficient number of serious cases to make them all competent, even granting they have the ability and previous training. It is a mistake for a young man to go out with his one year's experience in hospital work and give out the statement on his cards and otherwise that he is to do surgery exclusively. If young men are permitted to enter surgery without experience or training and to say that they will displace their elders, still other young men will come on and displace them, so whether the surgical work comes early or late it will last only for about the same period of time. The objection to adequate preparation on the ground that the surgeon will be an old man before he starts is not valid.

As Halstead says:

> The faults of our system of educating surgeons begin almost at the bottom and continue to the very top. I am considering only the training of the best men, those who aspire to the higher career in surgery. On graduation they become hospital interns, but their term in the hospital is only one and a half, occasionally two years, only a little longer than the term of hospital service required in Germany of every applicant for the medical degree, and not so long, on the average, as that required of each medical graduate of the University of Tokio.

The foundation for improved conditions in our profession must be in more efficient education. In less than ten years the Council on Medical Education of the American Medical Association has done a prodigious work. The Council found that in this country there existed 166 medical colleges, which was one less than existed in the remainder of the civilized world. As a result of the investigation, classification and publication of the work of this council, sixty-five of these colleges have been merged to make stronger ones, or have become extinct. Many of this latter type were a disgrace. There are about 112 medical colleges in the United States now. When we realize that there are only twenty universities in the German Empire, it is obvious that in America we have an oversupply, and a further reduction, in the light of modern educational demands, is inevitable. Already the large majority of low-grade colleges are not fully recognized by some twenty-four state licensing boards.

Stupendous improvements have been made. The four-year course is universal. A four-year high-school course is the minimum requirement for entrance. All of the better colleges have adopted in addition a premedical year of chemistry, physics, biology and a modern language, which goes into effect in January, 1914. Thirty-two medical colleges require as a minimum for entrance two or more years of college work in addition to the four-year high-school course. There will not be an increased college requirement, because that would keep the man too long and he should not be over 24 or 25 years of age when he begins his life work.

The next and much-needed advance is the compulsory or fifth year spent as a hospital intern. The council on education is now preparing data for this work. While the council has, of course, no legal function, still, if it can do the investigative and standardizing work for the hospitals in this country that it did for the medical colleges, it will do great good. In connection with the Council, the Carnegie Teaching for the Advancement of Learning signified its willingness to help. A munificent endowment has been set aside for this work. It will consist of an intensive investigation of the hospitals in the thirty-five most populous centers, together with the inspection of all the hospitals in this country. They will be classified somewhat similarly to the colleges. The basis of classification being the number of beds, the amount of endowment or appropriation for their support, the equipment and laboratory facilities, the methods of organization and willingness to furnish proper training for medical students. At present there are a total of about 3,000 interns. The combined graduating classes equal about 4,500 students. This still leaves about 1,500 graduates for whom hospital internships should be provided if the internship year becomes compulsory. As about 1,400 hospitals, having approximately 3,500 beds, have no interns, it seems that this matter could be easily arranged. I have referred to this matter only from the intern's standpoint, but it is apparent that the good accruing to the hospitals themselves, the general uplift from more detailed information as to their needs, and a constructive policy for betterment are benefits almost incomparable.

Even now over one-half of the high-grade colleges placed 70 per cent. of their graduates in hospital positions last year. Some such arrangement as withholding a license to practice until after the hospital year has been satisfactorily completed would be very desirable. Let final examinations occur at the end of the fourth year, but licensure should not be completed until the hospital service is finished.

Every hospital should require the most promising of the interns to continue their service into the second or third year as house surgeons. This not only gives the capable man longer training, but also is a protection when the house staff changes; it is a great help to the new interns; a stimulus to their best efforts and the only way to keep up the traditions, methods and *esprit de corps*. Whenever possible the large hospitals should inaugurate the system of having a resident surgeon, choosing the exceptional man, whose tenure should be indeterminate. This increased opportunity for surgical training and the prolonged inspiration of his chief would afford the best of facilities for a great surgical career.

Quoting again from Halstead:

> It is a grave mistake, it is a shame, to check suddenly the advance of these superior young men, who are tense with enthusiasm, who rejoice in the work to which they hope to be able to dedicate their lives. It is from these men, we must not forget, that our teachers of surgery are made.

The foundation in Washington last month of the American College of Surgeons, which has for its purpose the elevation and standardization of surgery for the benefit of the profession and the protection of the people by the granting of a fellowship to all men whose surgeonship is established and the conferring of the title F. A. C. S., which will indicate to the public and the profession that its possessor is well qualified to practice this branch of the profession as a specialty, seems to give form to the movement for increased requirements and the maintenance of a higher standard. The college is to be independent of all societies, continental in scope, democratic in spirit and eventually to comprise all of the men in the United States and Canada who are properly qualified and so to designate them.

It is to be presided over by a board of governors, elected by the college. A board of regents, chosen by the governors, acting as trustees, will from time to time establish requirements for the granting of fellowships. All surgeons of prominence having had five years in the practice of surgery, or one of its specialties, who are of unquestioned moral character, measured by the standard of the college, and who are vouched for by the committee on credentials, are eligible to fellowship without examination.

Ultimately, the college will formulate prescribed requirements, with examination, for the younger men who are candidates for the fellowship. Already the founders represent every large city in America; all of the medical universities; all of the general and special surgical societies; all of the important hospitals and clinics, and a large number of independent surgeons throughout the continent.

It seems that this movement is of transcendent importance. If all of the good men who are properly qualified become Fellows of the American College of Surgeons, and those who morally and educationally are unfit to do surgery are not accepted, it will be a crystallization of the high ideals for which the American Medical Association has always stood.

Every man who expects to practice surgery as a specialty should be required to act as chief assistant to a master surgeon for at least three years, and better five. It will be objected that this is too long, but the goal is not for those who soon weary of study and protracted preparation. Apprenticeship is far more essential in surgery than in any of the arts in which it is universal. A man is obliged to act as apprentice a specified number of years before he is allowed to pilot a lumber scow. Who asks to see the pilot's license when a surgeon is needed to pilot the frail bark of life through the treacherous "waters that separate the island of Time from the mainland of Eternity"?

We need a system of requirements and a course of training, and they surely will be realized, that will make of the first youths of our land what their abilities and ambitions entitle them to be, will attract to surgery the very best material and will make of the rank and file well-equipped and conscientious surgeons.

As suggestive the following outline of requirements is formulated:

1. A full four-year medical course in a high-grade medical college or university, leading to the degree of M.D., after adequate high-school and the special one-year premedical science course in college. It is especially desirable that, in addition to thorough fundamental and laboratory training in anatomy, physiology, pathology and bacteriology, such schools provide ample, practical instruction in dispensary and ward classes in medicine, surgery and the specialties, with practical midwifery and post-mortem work.
2. Compulsory hospital internship in a good general hospital, with adequate laboratory facilities, for at least one year and if possible two years.
3. Certain high-grade colleges maintaining or controlling exceptionally good hospitals should be encouraged to give a one-year graduate course in surgery after two or more years' hospital work, or after three to five years of general practice leading to the degree of master of surgery, which in addition to practical hospital work should thoroughly teach gross pathology, operative surgery on the cadaver, perfected technical work on the viscera of slaughtered animals, and experimental surgery on the lower animals. The student should be brought into close touch with the research laboratory. This would fill a great want. So many well-prepared and ambitious young men after being in practice for several years and doing some surgery with more or less success, are anxious and clamorous to take additional work, to which they are willing to give the required time and for which they are willing to pay. They importune many individual surgeons to take them as private assistants. The strictly postgraduate schools have been of considerable value to such men, but as a rule the courses are not long enough.
4. In addition to a compulsory hospital internship before licensure, a specified number of years of general practice, or extra years in a hospital, should be required of those who would make surgery a specialty. No man can become a good surgeon without the illuminating experience of general practice.
5. Before taking up surgery, a man should be required to serve at least three years as assistant to an established surgeon.
6. The requirements need not be quite so exacting for the aural or ophthalmic surgeon, but should embrace as a minimum at least two years' hospital work, one year in general and one year in special work, the latter to follow at least two or three years in general practice.
7. It would seem desirable that a prescribed course of study and training somewhat in conformity with the foregoing should be followed by examination and conferring of a distinctive title to distinguish the surgeon from the internist.
8. The establishment of certain legal requirements for the practice of surgery, to be enacted into a uniform state law, or if possible into federal law, providing for special examination and licensure. Such a law was introduced into the Illinois legislature at its last session and embodied most of the suggestions herein set forth.

In the making and maintaining of a high degree of surgeonship, the value of travel and studying the work of the great clinicians of our country, as well as those of Europe, cannot be too forcefully urged. Kocher has been the traveler of Europe, and the men who have the greatest clinics of America are themselves the greatest observers of the work of others.

The obligation of the profession in medicine, as well as in surgery, is a very sacred one. It must be our constant endeavor, by the unwritten laws of custom, by the force of speech, by ethical regulation in the profession, by educational betterment and by statutory enactment, to safeguard the traditions and ideals of the profession and fulfil our highest obligation in caring for the lives, the health and the happiness of the people of this country.

148 Eighth Avenue North.

ONE HUNDRED AND SEVENTEEN CASES OF INFANTILE DIARRHEA TREATED BY INTESTINAL IMPLANTATION OF THE BACILLUS LACTIS BULGARICUS AT THE BABIES' HOSPITAL OF THE CITY OF NEW YORK *

RALPH OAKLEY CLOCK, M.D.
Author of "Our Baby"
NEW YORK

When I presented my report[1] on this subject last year before the New York Academy of Medicine, some of my colleagues were decidedly skeptical of my results. Moreover, they felt that it would be hazardous to adopt such radical measures as I had employed; and they were loath to proceed with the courage necessary to achieve success. As emphasized in an editorial[2] in the *Archives of Pediatrics,* it does require courage to use this method of treatment in all cases; but if the beaten path were always followed by every one, the practice of medicine would not have attained its present high standard.

In my former paper I stated that "a starvation diet, accompanied by purgation, is productive of loss of weight and strength, and serves to prolong the course of the disease." I call attention to this statement now, because too much emphasis cannot be laid on this point; and the results herein chronicled will, I believe, leave no doubt as to the superiority of the implantation treatment and the fallacy of a starvation diet.

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* Read by invitation before the New England Pediatric Society, April 25, 1913.

[1] Clock, Ralph Oakley: Intestinal Implantation of the Bacillus Lactis Bulgaricus in Certain Intestinal Conditions of Infants, with Report of Cases, The Journal A. M. A., June 29, 1912, p. 2017.

[2] Arch. of Pediat., August, 1912, p. 561.

The present work was undertaken in order to corroborate or disprove the results obtained in my private cases, which were presented in my initial paper. Through the courtesy of Dr. Royal Storrs Haynes, arrangements were made whereby all cases of infantile diarrhea in his division of the outpatient department of the Babies' Hospital of the City of New York were placed on the implantation method of treatment during the summer months of 1912.

The patients were treated by various members of the outpatient department staff, all working in collaboration under my supervision. Hence, the personal element in the treatment was eliminated. Clinical observations were made on the material which we had at our disposal, every case of diarrhea being immediately placed on this special, but simple, treatment. Therefore, there was no selection of cases. In contrast to the conditions which obtained in the homes of my private patients, the hygienic environment of these hospital patients did not in any way favorably aid the treatment; for the hygienic conditions of the homes of most of these patients were of the poorest. Moreover, it would have been difficult to secure from the mothers proper cooperation along dietary lines; but the feeling is deeply rooted in these women that "medicines" will cure their babies; hence, they used the tablets without question. The patients were seen only every two days, in other words, three days a week. It was not always possible to see a specimen of the stools for each day, so that we often had to record the mothers' reports on this point. But we had two other very reliable and important guides as to the effect of the treatment; namely, the weight and the general condition of the patients.

Unfortunately, we were not able to make a bacteriologic classification of the cases, and thus complete the twofold value of the work. But the clinical results were very striking; and they proved most emphatically the rationale of our treatment.

NUMBER AND AGE OF PATIENTS

The total number of patients treated was 117; of this number, 116 recovered and one died. This one death occurred in a severe case of enterocolitis which had persisted for two weeks before receiving any treatment. The patient's condition was highly toxic and, after one week's treatment in the clinic, the baby was transferred to the wards of a hospital where it could be kept under daily observation.

Seventy-two of the 116 patients who recovered returned to the dispensary during the winter with some other affection; so we know their recovery was permanent. The remaining forty-four patients were called on by the visiting nurse to ascertain whether they were still living. She reported that three of the patients had moved away from the city and could not be traced; but the other forty-one were in good health. Therefore, our recoveries were not temporary but permanent.

The babies varied in age from 6 weeks to 2½ years; there was one 6 weeks old; two were 2 months old; ten were 3 months old; five were 4 months old; two were 5 months old; twelve were 6 months old; twelve were 7 months old; four were 8 months old; three were 9 months old; eleven were 10 months old; eight were 11 months old; fourteen were 12 months old; five were 13 months old; two were 14 months old; four were 15 months old; three were 16 months old; nine were 17 months old; two were 18 months old; two were 19 months old; one was 22 months old; four were 2 years of age; and one was 2½ years old.

CONDITIONS

Types.—The intestinal conditions included four cases of enterocolitis and 113 cases of gastro-enteritis; of the latter, 47 were of the mild form; 52 were of the severe type, and 14 were toxic.

Duration.—The average period of time that the condition had lasted, prior to instituting treatment, was one week; the longest duration of the condition, before treatment, was three weeks, and the shortest period was two days.

Number and Character of Stools.—In 46 cases, the number of stools per day, before treatment, was from 10 to 15; and in the remaining 71 cases, the number varied from 6 to 10. The general character of the stools was loose or watery; they were green in color, had an offensive odor, and contained varying amounts of curds, mucus, or blood. Mucus occurred in 63 cases, and blood was present in 18 cases before treatment.

Vomiting.—This had been present in 70 of the cases. Many of these patients had been troubled with persistent vomiting, all food being rejected soon after it was taken.

Fever.—This was present in 49 cases; the temperature ranged from 100.2 F. to 104.2 F.

Diets.—Sixteen patients were breast-fed and 101 were bottle-fed. The diets of those that were bottle-fed consisted of the following: (1) top milk formulas with cane sugar; (2) modified milk with dextri-maltose; (3) modified milk with milk-sugar; (4) milk modified with proprietary foods; (5) whole milk and water; (6) pasteurized milk formulas; (7) barley water; (8) barley water and proprietary foods; (9) barley water and boiled milk; (10) barley water and skimmed milk; (11) barley water and whole milk; (12) mixed dietary of whole milk, cereals, soups, etc.

TREATMENT

Method.—The treatment consisted of the administration of a pure culture of the true *Bacillus lactis bulgaricus*—the Type A organism, which was isolated from Bulgarian soured milk (yoghurt) and first described by Grigoroff[3] of Massol's laboratory at Geneva. This culture was imported through the Johns Hopkins Hospital and elaborated in tablet form in the Hynson Westcott Laboratories at Baltimore. One or two tablets were usually given every two or three hours; but, in severe cases, two or even three tablets were given every two or three hours *before* and *after* each feeding—making a total, in some cases, of forty-two tablets in twenty-four hours.

Diets During Treatment.—Seventy-four babies were continued on their respective milk diets; among this number were four breast-fed babies, ranging in age from 12 to 15 months, who were removed from the breast and placed on bottle-feeding composed of equal parts of whole milk and water; and twenty-three babies between 15 months and 2½ years of age who were continued on their mixed dietaries of milk, cereals, soups, etc. This number also includes twelve babies who were continued on breast-feedings, and thirty-five babies who were continued on their regular milk mixtures or on their regular mixtures slightly diluted with water.

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[3] Grigoroff: Etude sur un lait fermenté comestible; le kisselo mleko de Bulgarie, Rev. méd. de la Suisse rom., 1905, xxv, 714.

The remaining forty-three patients were placed on a starvation diet of barley water for twenty-four to forty-eight hours, after which small quantities of boiled, skimmed or whole milk were usually added to the diet.

Cathartic.—Twenty-nine of the forty-three patients who were on a starvation diet were given a preliminary dose of castor oil. No cathartic, however, was given to any of the patients who were on a milk diet.

Signs of Improvement.—Improvement under the implantation method of treatment was shown by three cardinal signs: (1) gain in weight; (2) rapid change in character of the stools to normal color and consistency, regardless of their number; (3) improved general condition of the patients as evidenced by (1) improved appetite, (2) subsidence of fever, (3) abatement of vomiting, and (4) better appearance.

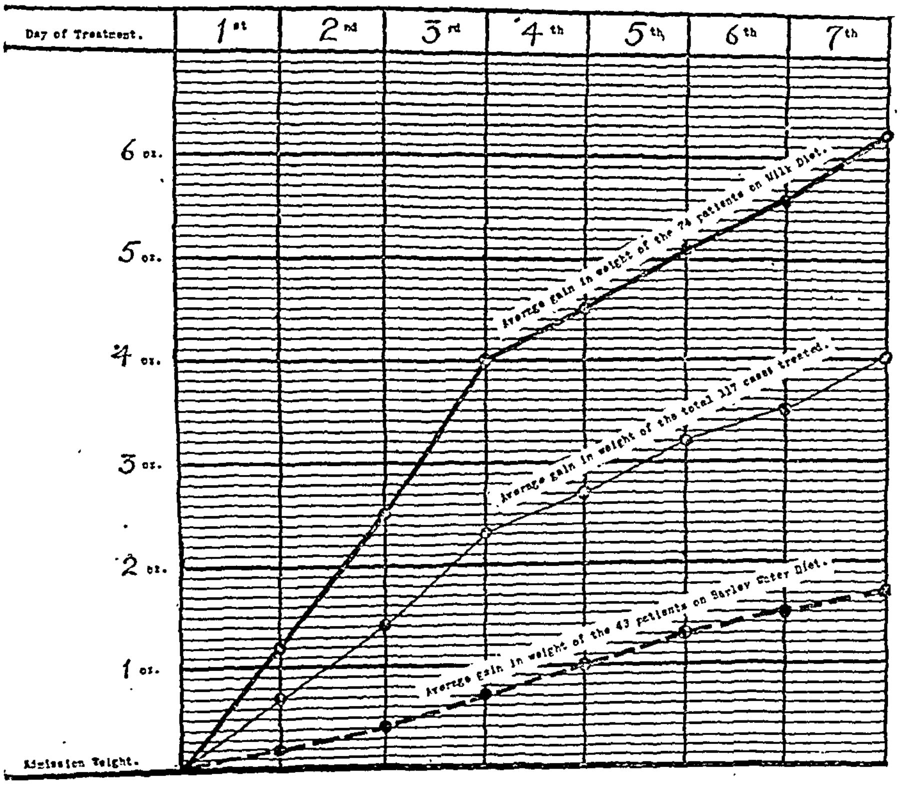

Diagram showing the average increase in weight during the first week of treatment by the implantation method. The heavy horizontal lines represent ounces; the light horizontal lines represent tenths of ounces.

RESULTS OF TREATMENT

Stools.—The number of stools usually decreased very rapidly, although this did not always follow. In eleven cases the number of stools continued to be excessive even when the color had become normal; but the babies gained in weight nevertheless, so that the large number of stools had no deleterious effect on the patients. In one case there were twenty stools passed in two days, but the baby made a steady gain in weight.

The average time required for the stools to become yellow was 3.1 days. Mucus and blood invariably disappeared from the stools on the second day. This is a point which I did not sufficiently emphasize in my former paper.

Vomiting.—As a rule, vomiting likewise ceased on the second day of treatment.

Appetite and Fever.—The appetite improved, and the fever practically subsided on the second day. The mother's report usually was: "Baby takes his food better; he sleeps better, and his fever is gone." The improvement in the appetite and the drop in the temperature always occurred at least twenty-four hours prior to the stools becoming yellow.

Weight.—The most striking feature in the treatment of these cases was the phenomenal gain in weight. Such emphatic and conclusive results, as shown by the increase in weights, fully justify the adoption of this method of treating infantile diarrheas. It is well to bear in mind, however, that the gain in weight which occurred in these cases was in no sense the gain such as occurs in children showing edema—the so-called edema of malnutrition. Moreover, the increases in weight were permanent; a relapse did not occur except in one case, the history of which is herein recorded.

Greatest Gain and Loss.—The greatest single gains in weight were 4 ounces in two days and 10 ounces in five days; while the average gain was 0.7 of an ounce in the first twenty-four hours. The greatest loss was 4 ounces in three days—this occurred in a patient who was on a barley-water diet.

Relation of Weight to Diet.—Every patient who was either breast-fed or given a modified milk diet, or a diet of milk and water, or a dietary of milk and other foods, gained rapidly in weight. These comprise seventy-four out of the total number of 117 patients treated. The other forty-three patients—twenty-nine of whom were given a cathartic—were on a starvation diet of barley-water for the first twenty-four or forty-eight hours, after which small amounts of milk or proprietary foods were added. Twenty-five of these forty-three patients made steady gains in weight, and seventeen of them showed initial losses followed by slow but permanent gains in weight, while one patient suffered a progressive loss, and subsequently died without making any gain in weight.

CASE HISTORY OF PATIENT THAT DIED

History.—This one death occurred in the case of an infant 3 months old who had suffered for two weeks with a severe enterocolitis. The diet had consisted of barley-water and milk. There had been persistent vomiting of all food, associated with bloody diarrhea; the stools were watery, dark green, seven to ten in number, and contained large amounts of blood and mucus. The temperature was 101.2 F. and the weight 9 pounds, 14 ounces.

Treatment and Course.—In this case, two tablets were given every two hours; an initial cathartic of castor oil was prescribed, and the infant was placed on a starvation diet of barley-water. Two days later, the temperature had dropped to 99 F. and vomiting had ceased. The stools were five in number, greenish yellow, and free from blood and mucus. The weight was 9 pounds, 13 ounces. The tablets were continued and a diet of skimmed milk and barley-water was given. At the end of a week, the weight had fallen to 9 pounds, 10 ounces—a loss of 4 ounces in seven days—and the infant was in such a weakened condition that it was transferred to the wards of a hospital, so that it could be observed daily.

AVERAGE GAINS IN WEIGHT

In order to emphasize and, at the same time, compare and contrast the relative average gains in weight of the patients who were placed on a starvation diet with those that were continued on some form of milk diet, I have prepared the accompanying diagram.

The average gain in weight of all the patients that were kept on some form of milk diet from the very first day of the treatment (indicated on the diagram by the heavy, solid line) was 1.2 ounces for the first twenty-four hours, and 6.2 ounces at the end of the first week. These comprise the seventy-four patients who were either breast-fed or who had a modified milk diet, or a diet of milk and water, or a dietary of mixed food.

The forty-three patients—twenty-nine of whom had an initial dose of castor oil—who were placed on a starvation diet of barley-water for twenty-four or forty-eight hours (shown by the heavy, broken line on the diagram), showed an average gain of only 0.2 of an ounce at the end of the first day, and 1.7 ounces at the end of the first week.

Therefore, the babies that were kept on a milk diet showed an average gain in weight, during the *first twenty-four hours,* of only 0.5 of an ounce less than the average gain made in the *entire first week* by the patients who were placed on a starvation diet! In the face of these convincing results, does it seem reasonable for a physician to advocate the old-fashioned method of treating these conditions with a cathartic and a starvation diet?

The average gain in weight of the total number (117) of cases treated (indicated on the diagram by the light, solid line) was 0.7 of an ounce for the first twenty-four hours, and 4 ounces at the end of the first week!

MILK VERSUS STARVATION DIET

The babies that were placed on a starvation diet made on an average very small, but quite uniform gains in weight. The tremendous loss of strength which occurs on a starvation diet robs the system of the opportunity of deriving the maximum benefit from the addition of milk to the diet at the end of forty-eight hours, even though the intestinal condition at that time may be under control. Moreover, during the starvation period there is no adequate supply of available carbohydrate, which is so essential to the rapid proliferation of the *B. lactis bulgaricus.* Hence, the intestinal condition responds less rapidly to the treatment.

In marked contrast to the slow but uniform gain on the barley-water diet is the rapid and abrupt gain in weight when some form of milk diet is used. Here, the increase in weight was very rapid during the first three days. Why? Because, after the putrefactive process had been arrested by the action of the *B. lactis bulgaricus,* the food immediately began to satisfy the caloric needs of the body, and nutrition thus suffered no loss. This explains why the digestive tract, under this method of treatment, can take care of food which previously had caused indigestion and malassimilation. At the end of the first three days, improved assimilation had counterbalanced the loss of nutrition incident to the putrefactive process; and, therefore, the weight curve continues upward but less abruptly, the increase now being more gradual.

In discussing my preliminary report last year, the question was raised as to the advisability of continuing a diet which had been the source of the trouble. I wish to state here that I do not consider the diet to be always the causative factor. On the contrary, the condition is, I believe, more often a bacteriologic one; and, when that has been altered by the *B. lactis bulgaricus,* the food is assimilated and supplies the bodily needs, provided, of course, the diet was a suitable one before the onset of the intestinal condition. Morse[4] has pointed out that "there is a type of diarrhea in infancy, due primarily to bacteria, usually characterized by watery, green, foamy, irritating stools, but sometimes with discharges of mucus and blood; and that this type of diarrhea yields most rapidly to mixtures containing living lactic acid bacteria with a small amount of lactose." The cases reported in my initial paper, as well as those herein recorded, presented precisely this type of diarrhea, which responded immediately to the implantation method of treatment.

COMPARISON OF DIETS

Value of Milk Diet.—The diagram, herewith submitted, of the average gains in weight shows very clearly and conclusively the perfect rationale and superiority of continuing a milk diet, in preference to substituting a starvation diet of barley-water for one or two days.

Value of Implantation Treatment.—In order to emphasize more strongly the value of the implantation method of treatment and, at the same time, to show the fallacy of a barley-water diet, the following case is cited:

A. S., aged 3 months. Gastro-enteritis.

July 1, 1912: Diet had consisted of a Straus milk formula. There had been vomiting and diarrhea for four days; the stools were loose, green, contained mucus and numbered from seven to eight daily. The weight was 8 pounds, 11 ounces. Treatment consisted of a diet of barley-water, given every three hours.

July 3: Condition unchanged. The weight was 8 pounds, 11 ounces. The diet was changed to ½ ounce of boiled milk with 3 ounces of barley-water, given every three hours.

July 5: There was frequent vomiting. The stools were unchanged, and the weight was 8 pounds, 11 ounces.

July 8: The condition and weight were the same, and the same diet was continued.

July 12: Practically no change.

July 15: The amount of milk was increased to 1 ounce at each feeding, with 3 ounces of barley-water.

July 17: The stools were loose, green, with large amounts of mucus, and numbered seven daily. The weight was still 8 pounds, 11 ounces.

You will note that, thus far, the condition had persisted in spite of dietetic treatment; and there had been no gain in weight during a period of over two weeks. On this day (July 17), without changing the diet, bulgara tablets were first administered, one tablet being given before and after each feeding.

July 19: There was no vomiting. There had been four stools in the past twenty-four hours; they were light yellow, perfectly formed, and free from curds and mucus. The weight was 8 pounds, 12 ounces—a gain of 1 ounce in two days! Treatment was continued.

July 22: There were five stools, light yellow and free from mucus. The weight was 9 pounds. The amount of milk was increased to make the mixture one-half milk and one-half barley-water, and the tablets were continued.

July 31: The stools were normal. The weight had increased to 9 pounds, 9 ounces. The diet was changed to a modified milk formula containing cane sugar, and the tablets were continued, one every three hours.

August 5: The infant was in good condition. The stools numbered from two to three daily, and were soft yellow. The weight was 9 pounds, 13 ounces. No change was made in the treatment.

September 4: The mother had been obliged to seek employment and was, therefore, unable to care for the infant, which was admitted to the wards of the Babies' Hospital where it was kept under treatment for three weeks. While in the hospital wards, the baby was placed on a barley-water mixture, and the tablets were discontinued. When discharged from the hospital, the patient was having loose, green, stools. The mother had a few bulgara tablets in her home which were left over from the July clinic. Of her own accord, she gave these tablets to the baby, and the stools became yellow within two days. The weight now (September 4) was 8 pounds, 9 ounces. In other words, during the infant's stay in the hospital wards where its diet had been changed to a barley-water mixture, and where the tablets had been discontinued, the weight had fallen below that which it had been when the implantation treatment was first instituted in the outpatient department. On this first day of the infant's return to the clinic, it was placed on a diet of modified milk with cane sugar, and one tablet was given every three hours.

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[4] Morse, John Lovett: Maltose in Infant-Feeding, Am. Jour. of Med. Sc., November, 1912, p. 640.

September 6: There were two, soft, yellow stools. The weight had increased to 8 pounds, 11 ounces—a gain of 2 ounces in two days. Treatment was continued.

September 13: The stools were normal, and the weight had increased to 9 pounds, 3 ounces.

October 4: The baby had made steady improvement and gain in weight had continued. The stools were normal, and the weight was now 10 pounds.

CONCLUSIONS

The most impressive facts, which stand out boldly as the result of this method of treatment, are:

1. The gain in weight, in spite of the number of stools.
2. The rapid change in color of the stools to yellow.
3. The rapid subsidence of fever.
4. Absence of mucus and blood from the stools at the end of forty-eight hours.
5. The fact that the hygienic surroundings of the patients and the degree of intelligence of the mothers had no influence on the results.
6. A starvation diet, accompanied by purgation, is productive of loss of weight and strength, and serves to prolong the course of the disease; and further, such a procedure can no longer be advanced as a rational method of treating infantile diarrhea.
7. The digestive powers in infantile intestinal conditions, even when associated with fever, are not so impaired as to prevent the digestion and assimilation of a milk diet. This fact is corroborated in typhoid fever, where the high calorie diet, in contrast to the starvation diet, has reduced the mortality to a remarkable degree. Moreover, the cases herein recorded prove the value and rationale of continuing a milk diet in infantile intestinal conditions, as illustrated and emphasized in the diagram of the weights.
8. In severe cases, best results are obtained by administering a large number of the tablets during the first two or three days of the treatment. As many as forty-two bulgara tablets in twenty-four hours have been given to very young babies without untoward effects.
9. The implantation method of treatment has progressed beyond the experimental stage, and the results of its use can no longer be questioned or disputed. This treatment has been proved of practical, clinical and scientific value, and its simplicity should appeal to every practitioner.
10. In order to secure the best results, in using the implantation treatment, a pure culture of the true *B. lactis bulgaricus* must be employed; otherwise, disappointment will follow. Bacteriologists recognize the fact that the same organism, isolated from different sources, will vary in its virulence and in certain other characteristics; and the *B. lactis bulgaricus* is no exception to this rule. While similar organisms have been isolated from the soured milks of several eastern countries, namely, Russia,[5] Egypt,[6] Armenia,[7] Syria[8] etc., yet the bacillus isolated from *Bulgarian* soured milk has been proved to possess the greatest antagonism to putrefactive bacteria. Moreover, in using a culture of this organism for implantation treatment, it is essential that the culture show only viable organisms and that these be present in sufficiently large numbers. Without doubt, it has been the lack of a pure, active culture of this bacillus in viable form that has been the cause of the indifferent results obtained in previous years with lactic acid bacterial therapy.

64 East Fifty-Eighth Street.

SKIN DISEASES AMONG FULL-BLOOD INDIANS OF OKLAHOMA*

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The suggestion of studying skin diseases in the American Indian was first made to me by Dr. Howard Fox, in July, 1910. About that time I also read with much interest an abstract[1] of a report by Dr. Isaac Levin, on "Cancer among the American Indians and Its Bearing on the Ethnologic Distribution of the Disease," laying particular stress on its relative infrequency among the full-bloods, made to the American Institution of Cancer Research, May 2, 1910.

My statistics and reports are largely based on my personal observations and investigations among the full-bloods or so-called "uncivilized tribes" of Western Oklahoma, composed of Arapahoes, Cheyennes, Caddos, Kiawas, including also a small number of Choctaws, Poncas, Wichitas, Seminoles, Delawares and Sioux. These investigations I have made on my own initiative, covering a period of the past eight years as opportunity was afforded. Furthermore, I may say that my diagnoses were not verified by microscope, Wassermann tests, etc., except in a few of the mentioned cases, but were based on clinical findings with only meager history in any case. The examinations of children were made in the different government schools or in the buildings of the agencies, while nearly all of the adults were examined under the most adverse environments. I was courteously received and kindly aided by the agents and physicians in charge of the reservations wherever possible, though I was accompanied most times by only a lazy, illiterate interpreter and made examinations while we both sat flat on the filthy, bespattered dirt floors inside a narrow tent or tepee. Among the conditions we experienced might be mentioned irritating smoke curling slowly from the camp fires around our heads to the vent at the top of the tepee, while the innumerable and ever-present mixed breed of dogs snapped at flies and scratched their prolific crop of parasites at our sides. Nor were our photograph galleries equipped with soft rugs, cushioned chairs or carefully painted backgrounds, but instead consisted of the most level place on the

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5. Beijerinck: Arch. néerl. d. sc. exactes, 1889, xxiii, 428.
6. Rist and Khoury: Ann. de l'Inst. Pasteur, 1902, xvi, 65.
7. Duggeli: Centralbl. f. Bakt., 1906, Part 2, xv, 577.
8. White and Avery: Centralbl. f. Bakt., 1909, Part 2, xxv, 161.

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] I have since received a reprint of this report which has given me much inspiration in my own investigations.

ground with our patient sitting on a stick of wood or perhaps his feet, with dirty canvas—the tepee—for a background; while the subject to be photographed constantly wiggled and changed positions or again stuck out his hand for more shining coins. Under these conditions, I could not obtain with any degree of accuracy information relative to frequency, recurrence, duration of case or the exact age or patient; but only recorded such as my eyes discovered or my interpreter was able to elicit by his sign language. During the full period of my observations, I made a more or less imperfect examination of more than five thousand Indians. In one thousand of this number only was I enabled to partially strip and make a satisfactory examination for all the skin lesions which might be present. I have, therefore, based my estimate among this limited number. As will be observed from the figures given in the table, I have found some diseases named of equal or greater frequency than among the whites. Though let me say here that I am now fully persuaded that this race of people is not subject to the same number and variety of skin lesions as are to be found in our own race.

TABLE 1.—TRIBES AND NUMBER OF CASES EXAMINED

Arapahoes, 337; Cheyennes, 381; Caddos, 310; Kiowas, 135; Wichitas, 70; Seminoles, 58; Choctaws, 47; Apaches, 46; Osages, 63; Delawares, 31; Poncas, 56; Sioux, 38.

Diseases Found	Cases		Remarks
	No.	Per Cent.	
Tuberculosis of cervical lymph-nodes	238	25	Of Arapahoes and Cheyennes.
Lupus	53	3	Of certain tribes.
Syphilis	46	3 to 5	More common in Arap. & Chey.
Pediculosis	186	5	Common.
Tinea circinata	8	.....	Not common.
Pityriasis capitis	210	.....	Limited to those who are or have been in school.
Tinea tonsurans	4	.....	Not common.
Seborrhea	31	.....	Have been in school.
Impetigo	137	6	Of children not in school.
Scabies	4	.....	School children.
Furunculosis	25	.....	Not common.
Variola	5	.....	Sweeps the whole unimmune vicinity when started.
Eczema	39	2	Of adults, dry or squamous type.
Verruca	226	10	Of all tribes.
Acne	212	10 to 20	In "teen" age.
Keloids	13	.....	....
Nevus	28	.....	Quite common.
Urticaria	4	.....	Not at all common considering their impure food.
Rhinophyma	2	.....	....
Rosacea	7	.....	Not common.
Keratosis senilis	18	.....	Quite common among the aged.

The following diseases were especially looked for but no case found:

Epithelioma
Pellagra
Psoriasis
Lichens
Herpes zoster
Tinea favosa
Dermatitis herpetiformis

Sarcoma.
Alopecia
Icthyosis
Erythema multiforme
Erysipelas
Sycosis

The diseases most common are: nevus, acne, eczema, lupus vulgaris and lupus erythematosus, pityriasis capitis, seborrhea, among schoolchildren; syphilis, verruca, pediculosis, impetigo and other forms of pus infection, and, perhaps the most frequent of all, tuberculosis of the lymph-nodes, particularly in the cervical region.

Without attempting to discuss each disease mentioned in regular order, I might first correct an erroneous idea which I had entertained before the beginning of my investigation, namely, with reference to the frequency of syphilis. I did not find this disease present in so large a number of these aborigines as I had been led to believe by former writers and by my conversations with some of the employees. On the contrary, with the exception of the Arapahoes and a portion of the Cheyennes, I did not find this disease as frequent as among our own highly civilized and—dare I say—over-sexualized race of people. Capt. John H. Seger, of Colony, Oklahoma, who has been with the Indians and connected with the United States Indian Service for more than forty years, and to whom I am much indebted, informs me that syphilis was practically unknown among the Indians until they became intimate with the Mexicans and white races after becoming more civilized. Possibly my findings in this disease may be partially explained by a custom which formerly existed in most tribes, namely, that of allowing the deformed or diseased infant to die without an effort at restoration or, as practiced in earlier days, to be buried alive. From personal observations and from inquiries made of persons long engaged in the Indian service, I believe that their custom of scanty dress and lack of false modesty, from infancy to adult life, or until they are taken into the schools and put under rigid training, has been conducive to less prostitution and the resultant diseases than in our own white race.

One may readily account for the prevalence of impetigo when is seen the real dirt, normal secretions, and excretions of the body which are many times allowed to remain on the skin of their children and helpless babes, until only by chance it is removed.

Again, it is a custom of their medicine men and other would-be assistants to treat open lesions and ulcers or infections, by placing their mouths over these lesions and sucking out, as they term it, the poison of the "witches" or "evil spirits" which has encompassed their bodies, thence going from one to another with their filthy mouths and hands disseminating this infection to all with whom they come in contact. This filthy mouth may soon join in a circle of bucks seated on the ground, passing the common "pipe of peace" from mouth to mouth until all have had an equal smoke and the pipe is empty.

Notwithstanding that the pediculus is an almost ever-present organism, I was impressed with the rarity of the ordinary resultant pustules and excoriations so characteristic in the infected white person.

The enthusiast on dietetics, among our numbers, might find food for thought and partially verify his claims for the meat-eaters, for Indians have eczema, though we found the percentage among these tribes not so high as that given in the table of the American Dermatological Association.[2] The forms are chiefly the dry squamous or the papular variety.

The extreme rarity of dermatitis medicamentosa, dermatitis venenata and other acute forms, may partially be accounted for by the lack of common usage of drugs, soaps, and other chemicals, though the Indians frequently apply quite freely on their faces and other exposed parts, paints and dyes made from the wild plants, berries, etc.

The skin of the Indian is apparently almost immune to the poison-ivy and other plants which cause so much discomfort to the women of our own race.

Their simple menu, consisting chiefly of a few of the vegetable roots, beans, corn, and meats of the wild animals, and beeves, dried or raw, or, as is many times the case, partially decomposed flesh of an animal having died of disease, does not predispose to gluttony with resultant urticaria, erythema multiforme, etc. No typical case of erythema multiforme was observed in my entire investigations and but few cases of urticaria.

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[2] Stelwagon, Henry W.: Essentials of Diseases of the Skin, p. 280.

Neither does the Indian's well-balanced and never overtaxed nervous system predispose to lichen planus, pruritus, hyperesthesias, and other neurocutaneous diseases. His meals are deliberately eaten and with full relish, but on account of its poor quality he has considerable trouble with his stomach and bowels, though with but few manifest symptoms on his skin.

Nature's adornment and protector of their heads—their hair—is to be envied by our ladies who are constantly adding to their own more of a foreign make. Not a bald-headed Indian of either sex was observed among the total number examined. Syphilis does not seem so conspicuously to affect their hair as it does that of the whites. The color of the hair in the full-bloods, in nearly all tribes, is the monotonous coarse-black or dark brown. Two cases of deep red hair were noted in the Delawares, though it was quite evident that they were not full-bloods. Their almost constantly bared heads render their scalp diseases few. Only four cases of tinea tonsurans were found, though there were many cases of pityriasis capitis, commonly known as dandruff. The latter disease is quite definitely limited to those who are at present, or have been in the past, closely confined in schools and made to carry out the rigid regimen of the use of comb and brush. In one school nearly 60 per cent. of the children above 12 years of age were affected with this disease. Practically no pityriasis capitis or seborrhea was found in the older and unconfined of the tribes, which further confirms the later accepted theories as to its etiology.

Only brief observations among full-blood Indians of Oklahoma are necessary to impress one with the prevalence of tuberculosis of the lymph-nodes. This disease seems to have a special selection for the lymph-nodes in the cervical and submaxillary regions, both anterior and posterior chains. It seems to be an infection which most readily attacks the young, beginning in many cases as early as the first or second years of age and continuing until after the age of 25 or 30, when most patients appear to have recovered. No doubt many of them succumb to its invasion of other organs of the body, for I observed several cases of tuberculosis of the bowels, and tuberculous peritonitis, which I am quite sure was an extension of the infection beginning in the cervical region. Just why tuberculous infection of the cervical lymph-nodes is so much more prevalent in this race than in our own is a question for solution. It may be because tuberculosis in general is so very common. I have also learned by numerous radiographs of the Indians that a large number recover from the pulmonary type of this disease. It is probably due, however, to the frequent occurrence of follicular tonsillitis, quinsy, etc., leaving the throat in a receptive condition for the tubercle bacillus, which, perhaps, lurks in the numerous meals of tuberculous meats on which he feasts without a qualm. The percentage of such diseases among the Indians is so high that I believe the special attention of the United States Indian Service should be called to it, so that such steps may be taken toward prevention of this initial infection as have been recently taken with reference to diseases of the eye among them.

Not a single case of that disease which is becoming so alarmingly prevalent in the United States, namely, pellagra, have I observed, nor have I had any reported by any of the physicians in charge of the Indians. The Indians, too, subsist mostly on the poorest quality of corn and many times spoiled foods and always endeavor to pitch their portable dwellings on the banks of the nearest stream of water.

In my examination of the different tribes and through inquiries of agents and physicians in charge, I made particular search for epitheliomas or any other superficial, malignant growths, without a single case having been fully verified as such. Dr. Roland of Muskogee, reports having seen one case of probable epithelioma situated just above the eyelid in an old Indian but this lesion was not verified microscopically and Dr. Roland admits that there is a probability of its being only an extended verruca.

Drs. C. R. Hume, Anadarko, A. L. Blesh, Oklahoma City, and F. H. Clark, El Reno, each report having seen a case which they diagnosed as cancer of internal organs, though their cases were not fully verified.

The report from Dr. Isaac Levin, previously mentioned, showed but twenty-nine cases of cancer among all the tribes throughout the United States. Also, not one of the cases reported was from Oklahoma.

Compare, if you please, an equal population, throughout the States, of our own race and we have some interesting data which should inspire a further investigation into the etiology and propagation of this dread disease.

The mortality statistics of the United States from eighteen states for the year 1900 gives 63.9 deaths from cancer per hundred thousand, and in 1909, 79.6. The same report from the same states gives us a total of 425 deaths from skin cancer alone from 1900 to 1909.

CONCLUSIONS

1. The full-blood Indian is not subject to the variety of dermatologic lesions found in the white race.
2. Full-blood Indians are almost free from such skin diseases as may be produced or excited by menstrual disorders or an overtaxed nervous system.
3. Though their food is limited in variety and poor in quality, they do not have many of the skin lesions which we ordinarily attribute to such causes.
4. Previous to civilization, baldness was probably unknown among the American Indians.
5. While syphilis is common among the different tribes, it is not so prevalent as the sensationalist would have us believe.
6. Tuberculosis of the lymph-nodes, particularly of the cervical region, is very prevalent and might be largely prevented if more prophylactic measures were enforced by our United States Indian Service.
7. The uncivilized Indian apparently is yet free from pellagra and almost immune to cancer.

Might we not find in a study of his simple outdoor life, limited foods, the character of his skin, etc., a clue which may lend material aid in the discovery of the etiology and propagation of these diseases among our own race of people?

ABSTRACT OF DISCUSSION

Dr. Howard Fox, New York: I have been particularly interested in this paper on account of the studies which I made among the negroes several years ago. In quite a number of instances, the skin diseases common in these two races correspond very closely, while in others they are diametrically opposite. For instance, the negro is practically exempt from psoriasis, and Dr. Lain has made the same observation of the Indian. The same is true of dermatitis venenata due to ivy poisoning; the full-blooded negro, while perhaps not absolutely immune to this infection, certainly does not suffer from it as does the white man. These are two points of similarity observed in these two races, but there are several other points in which our observations are quite dissimilar. Dr. Lain found many cases of pediculosis capitis among the Indians, while I found very few such cases among the negroes. Tinea is quite as common in the negro as in the white. Pellagra is very common among them, and I was surprised that Dr. Lain did not find a single case among the Indians.

Dr. M. L. Ravitch, Louisville: In addition to the points of similarity already mentioned in the skin affections common to the negro and the Indian races, I would include the tuberculous and the syphilitic dermatoses. Pediculosis I have found to be very common among the negroes, and I have also seen a few cases of psoriasis. I think the outdoor life of the Indians keeps them comparatively free from the skin disease which are more or less prevalent among civilized people. Again, I do not think that the negro, as seen in New York, is of the same type seen in the South; he is a little more civilized and perhaps more apt to acquire the same dermatoses as the white people among whom he lives.

Dr. Ernest Dwight Chipman, San Francisco: I think the rarity of certain dermatoses among the Indians is due to the limited opportunity they have had to acquire them. As a possible analogy I might state that in San Francisco scabies was almost non-existent until the time of the Spanish War, when a great many strangers came there; after that, scabies spread with great rapidity. Ringworm, ten years ago, was extremely rare; now it is very common. When the Indians have the same opportunity to acquire the dermatoses of the white race these affections will probably be just as common among them.

Dr. A. J. Markley, Denver: Has Dr. Lain observed an increase of tuberculosis among the Indians since they have been confined to certain reservations and fixed habitations? In one of the earlier histories of the Indian race I have read that tuberculosis was practically unknown among them when the country was first settled; also, that tuberculosis of the bones was very rare, although a few instances of tuberculous diseases of the spine were observed.

Dr. Isadore Dyer, New Orleans: In this study of skin diseases among the Indians, there seems to be a striking absence of the ulcerative type of skin affections. In the South, among the negroes, we find a large number of such cases either of syphilitic origin or the result of their occupation. Probably the latter factor would account in a large degree for the absence of such lesions among the Indians. The negro in the South lives under conditions of community life which subject him to a variety of diseases that are carried from person to person; while the Indian, on the other hand, spends much of his time out of doors. In considering this general subject, we should regard it from a sociologic rather than from an ethnologic point of view. There is no reason why the Indian, who does not belong to an inferior race, as does the negro, should have the same diseases as the latter, or that the two races should be compared as equal or similar.

Dr. M. L. Heidingsfeld, Cincinnati: Dr. Lain's paper sets forth one very interesting fact of possibly more historic than practical interest, namely, that syphilis is a rare disease among our American Indians. This is at variance with the much-exploited, but doubtless erroneous, idea that Columbus and his followers brought syphilis for the first time to the peoples of Europe. Careful investigation has shown that syphilis has been pandemic in Europe for ages, as far back as there is any authentic record of medicine. Dr. Lain's observations are in perfect accord with the findings of archeologists who have interested themselves in the study of this question, in relation to our American aborigines. The exhumation of prehistoric bodies has shown no syphilitic changes in the skull and bones of either the mound builders or American Indians. The bones of these peoples, however, have shown changes indicative of tuberculosis.

Recently an extensive exhumation of a large prehistoric burying ground near Cincinnati, showed no changes indicative of syphilis in the bones of the prehistoric tribes. Bodies, however, which were buried with glass beads and other trinkets of a more modern civilization, postdating the discovery of America, occasionally showed changes typical of syphilis.

Dr. Everett S. Lain, Oklahoma, Okla.: There is no doubt that the rarity of certain skin diseases among the Indians, particularly those of the contagious type, may be largely due to the habits of this race, living out of doors, as they do, and lacking contact with the weaker races. Their degree of immunity is high; that I have seen demonstrated time and again by their rapid recovery from serious infections.

In answer to Dr. Chipman as to the increase of tuberculosis among the Indians in the reservations, I would say that I began my investigations with that point in view, and in the course of my researches I came across an article dating back to 1746 relating to the Indians residing in or near the eastern portion of the present state of Oklahoma, and the author mentions that a disease which he calls consumption was then quite common among them, and he particularly refers to involvement of the bones. In our museum we have the excavated bones of Indians which show unmistakable evidence of tuberculosis. As to whether this disease is on the increase among them, it is so reported by men who have investigated that feature. The resistive power of the Indian is high. The Indians are practically all affected with tuberculosis, as almost invariably shown by the roentgenographic findings in the lungs. Again, the government physicians tell us that, although they find the disease alarmingly prevalent among the Indians, the percentage of recoveries from it is higher among them than among the whites.

STUDY OF THE COLLATERAL CIRCULATION IN SOME CASES OF SPONTANEOUS GANGRENE OF THE FOOT*

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When disease interferes with the volume of blood which passes along an artery, the tissues which its terminal branches supply receive less blood than they have been accustomed to. An urgent call passes to the central nervous system, which results in the dilatation of the collateral channels.

On the ability of the collateral channels to carry sufficient blood to the parts demanding it depends their life. It is almost a universal rule that physiologic processes are more than adequate to meet emergencies, for Nature has been generous in this respect; so we find that in the majority of cases arterial blood passes around the obstruction without difficulty and that the peripheral tissues do not suffer materially from the loss of their direct blood-supply.

When the blood-vessels of a limb are healthy, occlusion of the main artery at any one point is rarely followed by more than a temporary anemia of the periphery, and if care is taken in the selection of suitable sites the blood flows through the collateral channels so vigorously that the tissues barely suffer at all. On all the large arteries of the limbs these sites exist, as, for example, the third part of the subclavian and the brachial artery at its middle for the upper extremity; and the external iliac artery and the femoral artery in Hunter's canal for the lower extremity.

Accurate knowledge of the subsidiary or the collateral circulation is scarcely of less importance than that of the direct. Under ordinary circumstances, when the arterial system is healthy and normal, the subsidiary channels dilate the moment the main channel is obstructed and the blood is carried by them to the periphery so expeditiously that the process is taken as a matter of course. An assumption on the part of the surgeon that the collateral circulation is adequate is unwarranted, and his confidence is often rudely disturbed by disastrous results that occasionally follow some of the routine ligatures of arteries. It is just as necessary for him to be acquainted with the position and patency of the accessory channels as it is for the head of an irrigation farm to know all about his system of irrigation ditches. It is unpardonable to assume that the collateral circulation is competent without making sure of its state of efficiency.

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In some regions of the body, for example the arm and leg, these tests can be carried out with a fair degree of accuracy. Thus the arm can be rendered bloodless by being wrapped with an Esmarch bandage. If a tourniquet is now fastened on the upper part of the arm below the axilla the Esmarch bandage can be removed and the limb will still be bloodless. The brachial artery is now compressed against the humerus in such a manner as to obliterate its lumen, but not to stop the collateral circulation, and the tourniquet is removed. If the collateral circulation is competent blood will be seen to pass slowly from above around the obstruction until it finally reaches the finger-tips.

The same test can be applied in the thigh, pressure being applied to the femoral artery in Hunter's canal. In most of the other regions of the body either compression tests such as these are impossible, or it is not feasible to press on the main artery without at the same time exerting pressure on the collateral circulation, so stultifying the results. Under such circumstances it is unjustifiable to ligate the artery boldly and to trust to luck; it is preferable to expose the main arterial trunk by an incision and compress it temporarily by some form of apparatus which will obstruct the lumen. Of the various means that have been employed to accomplish this the simplest seems to be the aluminum band used by Matas. This consists of a flat strip of metal which can be passed around the blood-vessel like an aneurysm needle. The sides of the bent portion are then pressed together between the finger and thumb and the walls of the artery are mechanically brought in contact. (Experimentally, it has been found by Matas and Allen that it is possible to compress a vessel to the point of obliterating the pulse and to maintain the pressure for from three to four days before obliterative endarteritis occurs.)

If the pressure on the walls of the artery has not been excessive no harm is inflicted on the intima, and clotting does not occur. If serious symptoms make their appearance owing to inadequate collateral circulation, the bands can be removed and direct circulation reestablished.

Not only should we have proof that the collateral channels are physiologically competent, but we must know all about them from an anatomic point of view. A few concrete examples will *illustrate my* meaning:

1. In aneurysms occupying the popliteal artery the obstruction to the direct flow of blood through the main artery is often so complete that the limb is dependent almost entirely on the collateral trunks, namely the upper sural and articular arteries above, and the lower sural and articular arteries below. These collateral channels are in close proximity to the aneurysmal sac, and as the aneurysm enlarges, direct pressure is often made on them with disastrous results (gangrene). These facts should be weighed carefully in the choice of radical operations on aneurysms. The proximity of the collateral channels to the sac wall renders them easily liable to injury during the operation of excision. This operation will thus be seen to be much less safe than the "old operation of Antyllus," and much less desirable than the modern operation of Matas (obliterative endoaneurysmorrhaphy).

2. In ligature of the common iliac artery, great care should be taken not to injure the deep epigastric artery, which is one of the important anastomotic channels carrying blood to the lower extremity. If the transperitoneal operation is performed, it would be safer to make the abdominal incision in the median line and not through the rectus muscle. The same precaution as to injury of this artery should be used in ligature of the external iliac artery, in which the retroperitoneal method is usually employed; although here the anastomoses between the branches of the internal iliac and those of the internal circumflex are usually adequate.

3. In operations on the axilla which may result in obliteration of or removal of a segment of the axillary artery (for example, the old operation on axillary aneurysm or operations for the removal of axillary tumors), one should be careful to preserve from injury, the subscapular artery as well as the lower portion of the axillary vessel from which it arises. The main part of the collateral circulation comes along this trunk from the scapular anastomoses.

4. In operations on the intestines or during the removal of tumors from the mesentery, the course of the blood-vessels must be carefully noted. An accurate knowledge of their situation, and attention to the arrangement of the anastomosing loops, will often permit ligatures to be placed without endangering the circulation of the intestine, and will allow the removal of some tumors without resort to enterectomy.

In extensive operations on the rectum and sigmoid flexure the same careful selection of sites for ligatures will enable the surgeon to straighten out the intestine and render it so mobile that the sigmoid can often be drawn down to a sacral anus without interfering disastrously with its vascular supply.

With these introductory remarks, I will pass at once to the fundamental object of my paper, which is to present a few interesting facts concerning the collateral circulation in spontaneous gangrene of the lower extremity.

I have chosen three cases of gangrene to illustrate it, one of Raynaud's type, the other two of the senile form.

REPORT OF CASES

Case 1.—*Man, white, aged 39.* Spontaneous gangrene of the big toe of the right foot. Clear history of temporary ischemic attacks for at least a year before the appearance of the gangrene. Onychia appeared and the nail was avulsed. Gangrene appeared in the matrix and spread very slowly, advancing by fits and starts, and taking about four months to reach the metacarpo-phalangeal joint. Suddenly the circulation of the four outer toes was threatened and the patient consented to amputation.

Operation.—At the patient's request a disarticulation through the knee-joint was first made. The popliteal artery was completely blocked up with partially organized clot. A second amputation through the lower third of the thigh was made at once. The femoral artery at this level was filled with soft recent clot which was picked out with forceps. After the tourniquet was removed the ligatured femoral artery pulsated fairly vigorously and the terminal branches of the *profunda femoris* bled very freely. The amputation stump healed by first intention.

Dissection.—1. The femoral artery at the site of the upper amputation was filled with recent clot which could be removed easily.

2. The popliteal artery was completely filled with old standing partly organized clot.

3. The anterior tibial artery was atheromatous but was patent and contained no clot. All the blood passing to the foot had coursed along this vessel.

4. The posterior tibial artery was completely obliterated, being filled with a solid mass of completely organized clot apparently of months' standing. The anastomoses around the knee-joint had been so disturbed by the double amputation that an accurate dissection was impossible. The upper and lower sural arteries were found wide open.

Case 2.—Man, white, aged 71. Diabetic gangrene of the right heel of six months' standing. The gangrenous process was extremely indolent and had remained stationary for at least two months. The patient suffered from great pain in the part. There was marked atheroma of all the peripheral arteries. The urine was loaded with sugar.

Operation.—Under spinal anesthesia (stovain), an amputation through the lower third of the thigh was made. The femoral artery at the point of section was blocked up with a firm organized clot of long standing. After the tourniquet was removed the flaps were completely dry. Not a single ligature was applied to any vessel except the femoral vein, which was wide open. In spite of this the flaps lived and united by first intention. Just a week after the amputation the patient passed into diabetic coma and died.

Dissection.—1. The femoral artery at the line of section was completely obliterated.

2. The popliteal, below the origin of the upper sural arteries, was small but quite patent. It was patent as low down as the bifurcation into the anterior and posterior tibials.

3. The posterior tibial was thrombosed and unable to transmit fluids. The thrombus was partially organized.

4. The anterior tibial had a patent lumen along which fluid could be forced easily. It was atheromatous.

Case 3.—Man, white, aged 63. Diabetic gangrene of the right big toe and the contiguous parts of the sole of the foot. The gangrene was of the dry variety and practically stationary.

Operation.—Amputation through the lower third of the thigh under spinal anesthesia (stovain). The femoral at the point of division was almost obliterated. It contained no clot, but the walls were very much thickened and the lumen was very small. After the tourniquet was removed only a very thin trickle of blood escaped from it. The terminal branches of the profunda femoris bled freely.

Dissection.—1. The popliteal below the origin of the upper sural and upper internal articular arteries had a fair-sized lumen much larger than that of the femoral. This continued patent as low down as the bifurcation.

2. The posterior tibial was very atheromatous; its lumen was very small but fluids could be forced down it.

3. The anterior tibial was unusually large, very atheromatous and calcareous and the lumen was seriously narrowed.

RELATION OF FINDINGS TO THE CLINICAL SYMPTOMS

It is interesting to analyze the pathologic findings and to link them as far as possible with the clinical symptoms presented:

The actual appearance of the gangrenous onychia in Case 1 had been preceded for at least a year by attacks of local ischemia, shown by intense pain in the foot, cramps in the calf muscles and blanching of toes and foot. During this time it is probable that the circulation along the posterior tibial was becoming seriously embarrassed on account of the advancing arteritis. The actual onset of gangrene seemed to result from traumatism after removal of the nail. Even then the process was exasperatingly slow, four months elapsing before the whole toe became gangrenous. During this period blood was still reaching the foot and outer toes along the patent anterior tibial. The latter days of the affection were attended with threatening gangrene of the outer toes. This condition probably coincided with the obliteration of the popliteal artery by clot, which prevented any blood from reaching the lower extremity except that passing between the anterior tibial artery below and the anastomoses around the knee-joint above. The path of the blood around the obstructed femoral and popliteal vessels must have been by way of the terminal branches of the profunda femoris anastomosing with the upper sural and articular arteries, the latter with the lower sural and articular arteries, and these again with the anterior tibial recurrent branch. The path was so tortuous and the channels so narrow that a mere trickle of blood passed through, and as the case showed, gangrene was inevitable.

Gangrene affected the soft tissues of the heel and part of the os calcis in Case 2. The posterior tibial artery was completely blocked. The anterior tibial was patent.

In Case 3 the gangrene affected the big toe and a small contiguous part of the sole of the foot. Here the anterior tibial artery was unusually large although the lumen was narrowed. The posterior tibial was almost obliterated.

In either of these cases a high blood-pressure and a full current of blood from above through the femoral and popliteal would probably have been sufficient to force the blood along the patent vessels to the extremity. But in each case the current from above in the femoral was obstructed. The femoral artery was totally obliterated in Case 2 and blood was reaching the popliteal by way of the profunda femoris and the upper sural and articular vessels, thence passing into the patent anterior tibial. In Case 3, although a very small lumen was present in the femoral artery, the greater part of the blood passed into the popliteal and tibials by means of the same chain of anastomoses. It is evident that all blood reaching the tibials under such circumstances must carry so low a tension that the capillary circulation would be very sluggish, and sooner or later gangrene would be inevitable.

METHODS OF ASCERTAINING CONDITION OF ARTERIES

From the study of such cases the query naturally arises, Have we any means of finding out the exact pathologic state of either the anterior or posterior tibial arteries, as to the presence of atheroma and their respective capacities as carriers of blood? There are no absolutely accurate methods. Much must be a matter of surmise. The position of the gangrenous area, as of the heel pointing to obliteration of the posterior tibial artery in Case 2, or gangrene spreading along the plantar aspect of the foot while the dorsum is free, or vice versa, may be a valuable aid. Roentgenoscopy would enable us to picture the calcification of the arteries, but we often find the lumen of such arteries absolutely patent.

It is impossible to use pressure on either of these blood-vessels near enough to their origin to enable us to find out whether the circulation of the limb is carried on by one or the other or by both equally. Either vessel can be compressed just above the ankle and a certain degree of information obtained. It would be difficult, however, to apply accurate pressure above the upper malleolar branches, a necessary precaution if we wish to cut off all connection between the two vessels.

Can we find out whether the popliteal artery is patent? In Cases 2 and 3 the popliteal artery was patent although the femoral artery, at the site of amputation, was practically obliterated.

As described earlier, by driving all blood from the limb and putting pressure on the femoral artery in Hunter's canal before the tourniquet is released from the upper part of the thigh, the competence of the collateral circulation can be determined beforehand. This method, however, is a test of the collateral circulation as a whole and gives us no idea of the competency of its various factors. Blood may reach the toes, without passing along the popliteal artery, by way of the profunda, the upper sural and articular branches, the lower sural and articular and the tibials; and in the cases of popliteal aneurysm this is the usual path. In cases of atheroma it is probable that the popliteal artery remains open for quite a long period to meet the exigencies of the occasions as in our Cases 2 and 3.

At the present time we can only make a shrewd guess at the exact pathologic state of the blood-vessels, and on this account the treatment of actual and impending gangrene of the lower extremity is unsatisfactory.

CONCLUSIONS

The question of amputation is a knotty one to decide, both as to time and as to location. The plan of waiting is satisfactory as a rule, provided one is prepared to deal radically with the case if it does not halt. I am firmly convinced that the empiric rule of the old surgeons is based on correct principles: "Avoid amputation if possible, but if it is inevitable amputate high, that is, through the lower third of the thigh."

When careful dissections of the arteries are made, marked atheromatous changes will be found invariably in one or both tibials and in the popliteal and femoral also. As it is impossible to be absolutely certain as to the patency of these vessels, the risk of amputating through tissues supplied by diseased arteries is too great to be encountered. We can assume as a probable certainty that one or both tibials is obliterated or seriously obstructed; consequently amputation of the leg is to be shunned. Although in many cases the popliteal artery is patent and forms the main channel by which blood is carried from the upper anastomotic channels to the tibials (the femoral often being blocked, as in Case 2), it is unsafe to trust the future of an amputation stump (say of a knee-joint disarticulation) to such a precarious blood-supply.

It is much safer to amputate through the lower third of the thigh where the flaps are well nourished. At this level, even in cases in which the main femoral trunk is obliterated, the flaps are usually well supplied with blood derived from the muscular trunks of the profunda femoris.

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ABSTRACT OF DISCUSSION

Dr. Charles W. Allen, New Orleans: I have been interested particularly in the Matas hyperemia test and the Matas aluminum band, having worked them out with Dr. Matas.

Dr. W. W. Grant, Denver: It seems to me that two or three points are of very great importance in the discussion of this paper, First in importance is the point of amputation, or I should say, the degree of amputation that should be done. I recognize the fact that it is customary to amputate at as high a point as possible in case of gangrene of the foot or leg, if it is desirable to amputate at all. In cases of moist or wet gangrene due to infection, one should not wait for the line of demarcation. To amputate is the only thing to do in these cases. Ordinarily this is true of idiopathic gangrene but not of senile gangrene. I think that we ought to conserve as much of the limb as possible. The age of the patient and the etiology of the gangrene, whether it is due to infection or trauma, must always be considered in determining the question of amputation. I do not think that in cases of trauma of the foot, causing gangrene, we are justified in amputating above the knee. We ought to leave enough of the leg below the knee so that the patient will have a good stump for an artificial limb. That is a matter of great importance to laboring men. In fact, it is a matter of a good deal of importance at any time whether or not we should amputate above the knee in any case short of total death of the tissues due to infection of the leg below the knee. Ordinarily we can rely on the blood-vessels to produce in time a collateral circulation that will maintain the integrity of the remaining portion of the limb or a good part of it. In cases of hemorrhage or damaged blood-vessels, one should amputate in the absence of gangrene. In the acute infections with gangrene, one should also amputate.

Dr. J. E. Thompson, Galveston, Tex.: My remarks were intended to apply to gangrene from disease, namely atheroma. I find it difficult to make up my mind when and where to amputate. I have known of three amputations done, one at the ankle, one below the knee and the third at the middle of the thigh. I shall hesitate still more and more about performing an amputation below the knee until I am absolutely certain about the condition of the vessels, which at present I am not.

MID-OPERATIVE DIAGNOSIS IN UROLOGIC OPERATIONS

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I desire to discuss a subject that is forcing itself on the mind of the operator in numerous instances in urologic operations. I mean the correcting, the amplifying, the definite establishing of the diagnosis after the exposure of the organ that is the object of the interference. The seeming paradox that these experiences become more numerous with our advancement in refined urologic diagnosis is easily apparent if one considers that with the progress of knowledge the possibilities and the advisability of surgical work in urology become increased.

That this mid-operative diagnosis is of great importance is evidenced by the fact that the operative procedure must often be readjusted to the conditions discovered. For elucidation I shall give some striking instances and name the cases in the caudo-occipital progression.

In external urethrotomy, in most instances, the indication for mere splitting of the stricturing tissue or for more or less extensive resection of the fibrous tissue cannot finally be decided until the urethra or what is left of it in this region is exposed to view and to immediate palpation. How important this ultimate decision is can be proved by the revision of the late results of insufficient operations of this kind.

In Hagner's epididymotomy, one of the most satisfactory urologic operations, location and extent of the depleting incisions cannot be decided on until the testicle and its appendages are fully exposed: in some cases the swiftness and completeness of the result will depend on the decision whether or not, after puncture of a testicular hydrocele, the tunica testis ought to be removed.

It is also obvious that in operations for tuberculous involvement of the epididymis the extent of the interference can be determined only after the whole organ has been made accessible to vision and palpatory examination.

In suprapubic prostatectomy quite often the macroscopic differential diagnosis between simple hypertrophy and cancer of the gland cannot be made until the bladder is opened. The eventual diagnosis of malignancy will influence the decision either to desist from a radical operation or to excise and not to enucleate, if an operation is at all feasible.

Only the opening of the bladder and the subsequent changes in the circulation will permit differentiation between hypertrophy of the prostate and an edema which in some cases closely resembles the former.

In extensive tumors of the bladder, especially in those that are near the base of the viscus or are involving the latter, the mid-operative diagnosis assumes a very pronounced dignity. It is quite often impossible to acquire by cystoscopy or by preoperative bimanual palpation satisfactory information about the basis of the tumor or tumors and of the extent of the involvement of the adjacent parts of the bladder-wall and of the appendages of the bladder. Prevention of inoculation of cancer-cells during an operation is one of the demands of modern surgery. That means that in the instance under discussion the bladder must not be opened for the purpose of extirpating a suspicious tumor if the operator is not in a position to offer reasonable guarantees against the dissemination of cancer-cells into the surrounding tissue. This position is weakened if the free part of the tumor be friable or if the adjacent portions of the bladder-wall be involved to such an extent that it becomes impossible to clamp off the basis of the tumor, including sufficient apparently healthy tissue, so that this whole section of the viscus may be isolated from the rest of the bladder and removed without contamination. In tumors near the base of the bladder or involving it, these items can be ascertained only after the bladder is exposed and shelled out of its surrounding structure, thus becoming accessible to immediate palpation.

Another item of grave importance is the decision whether even an extensive resection of the bladder carrying a tumor gives a fair chance of a permanent result, or whether a complete extirpation of the bladder seems to be the only rational form of procedure, or whether the case under consideration must be pronounced inoperable. In other words, every operation of an extensive tumor around or on the bladder-base has to be looked on as an explorative laparotomy; that is, before any of the above-mentioned questions can be answered it is necessary to expose the bladder and its connections. This is done by digging the bladder out of its surroundings without opening it. Palpation will then reveal the character of the free part of the tumor, the width of its base, the extent of the infiltration of the adjacent part of the bladder-wall, the condition of the appendages of the viscus and the presence of glands.

In kidney surgery the mid-operative diagnosis is apt to develop signal triumphs. Unusually free hemorrhage in the approximating incision will call attention to the presence of adhesions in the depth and at the same time characterize these adhesions as so dangerous as to demand the most careful attention in order to prevent hemorrhages that may interfere with the orderly progress of the operation or lead to dangerous postoperative hemorrhages. At the same time this phenomenon contains a warning that the causative inflammation very probably has involved the peritoneum, gluing it to the kidney; the operator will therefore use extreme caution not to break into the serosa. A pronounced edema of such adhesions will call attention to the inflammatory character of your surgical kidney, making it very probable that the contents of the organ, that is, depraved tissue or pus, are still of an acutely infectious character, calling for protection of the surrounding structures during and after the operation, or even forcing a decision in favor of nephrectomy. If after exposure of the renal hilum a periureteral edema should be discovered, an edema involving the fibrolipomatous tissue surrounding the ureter on its course down to the bladder, the surgeon will weigh the clinical significance of this symptom. Such an edema as a rule is of mechanical origin, indicating that the ureter is somewhere kinked and consequently has to be exposed until the seat and nature of this obstruction is discovered and the diseased condition properly attended to. It is obvious that whatever the necessary surgery on the kidney may have been, complete and lasting relief cannot be furnished until the free patulence of the ureter is reestablished.

Bimanual palpation of the exposed kidney will in certain cases furnish information which may be absolutely decisive as to the choice between nephrectomy and nephrotomy, this decision being rendered before the kidney is opened by a dorsal incision. If, for instance, the operator has to deal with a coli infection and the palpation reveals only one area of softening, especially if located in the neighborhood of the pelvis, then nephrotomy will be indicated. The presence of only one abscess cavity gives a good chance for a cure by drainage, which can be maintained for any length of time the surgeon sees fit; while a prolonged drainage of the polar parts of a kidney obviously offers great difficulties.

If, on the contrary, the palpation of an enlarged kidney, infected by colon bacilli, reveals the presence of numerous sclerosed spots and a number of softened, impressionable areas between them, the chances of a cure by incision and drainage are very slim and out of proportion to the danger incurred by inundating the field of operation with the infectious contents of the organ. Here an ectomy of the unopened kidney will force itself into the foreground of consideration. It is not necessary, of course, to emphasize that, if the palpation of an exposed infected kidney proves this organ to be transformed into a mushy or fluctuating sac, the unopened kidney should be removed.

Palpation and inspection of the exposed kidney is also of preeminent value in streptococcic infection of the kidney. While ureteral catheterization and the associated tests make it possible to determine the presence of streptococci and to gain information as to the site of the subsequent pathologic changes, this part of the clinical observation does not give any information as to the quality and extent of the pathologic changes, and it is just these two points that determine the choice between nephrotomy and nephrectomy in these cases.

The details of this proposition are as follows: If the infection did not produce any extensive and pronounced infiltration, then the palpation of the exposed kidney will demonstrate a somewhat enlarged but generally soft kidney, and in such cases nephrotomy and subsequent drainage will accomplish a speedy and permanent cure. Even a markedly palpable infiltration, noticeable to the eye, will be amenable to cure by incision and drainage if it happens to be located close to the renal pelvis, because such a location makes prolonged and sufficient drainage possible. But if the streptococcic invasion has produced an extensive and hard infiltration of the renal parenchyma—something like a ligneous phlegmon—then a cure can be expected only from a nephrectomy. It is also very doubtful whether even a smaller infiltration of pronounced hardness, if distant from the center of the kidney, can be cured by incising it, because it is hardly possible to establish and maintain a thorough and lasting drainage at such a location.

In cases of renal concretions a combined palpation of the exposed kidney will be very useful. If after splitting open the renal pelvis one finger is introduced into it and the other hand is placed on the surface of the kidney, valuable information can be gained as to the sufficiency of the pyelotomy or as to the necessity of a parenchymal incision. At the same time this digitomanual palpation will enable the surgeon to explore the calices and locate concretions higher up in the parenchyma, thus leading to the fulfilment of the demand to remove as many stones as were shown in the x-ray picture. The necessary sounding of the ureter in stone cases is also most satisfactorily executed through the exposed kidney after it is opened either through nephrotomy or pelvotomy.

In perirenal suppurations the mid-operative diagnosis will also influence the further operative steps after once the perirenal abscess is exposed. Closed perirenal abscesses are as a rule the product of an infected perirenal hematoma, and in such cases it will be sufficient to liberally incise the abscess wall and to provide for ample drainage. Diffuse perirenal suppurations are usually due to an infection of the perirenal tissue from a "renal carbuncle"; it will be imperative, therefore, if such a diffuse suppuration is encountered, to explore carefully the surface of the connected kidney and look for such a superficial infected focus in the surface of the kidney and attend to it properly when located.

I do not claim to have enumerated all the instances in which this mid-operative diagnosis will show its importance in urologic work, but I have endeavored to give some very marked examples. At the same time, I am aware of the fact that the urologic operators perform this mental function all the time; but, if I may be permitted to say so, most of the time in a rather subconscious way. Hence, I am inclined to believe that if the attention of the men interested is called to this proposition, by pertinent publication, the more concentrated attention given to these points will result in furnishing the profession with additional information that will turn out to be valuable not only by furthering our knowledge but also by bettering our results.

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CUTANEOUS AFFECTIONS OF CHILDHOOD *

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The cutaneous affections of childhood, while only a part of the whole field of dermatology, and while of the same pathologic character as in adults, are still sufficiently different in their etiology, symptomatology and therapeutics to deserve a more individual consideration than they are given. Whatever notice is taken of them now in the dermatologic text-books is limited and widely scattered and for their connected study the reader might almost find more information in the treatises on pediatrics.

The subject is too large to be covered thoroughly and systematically in a short paper. For this reason only a few points appertaining directly to cutaneous affections of childhood will be taken up in a general way and promiscuously.

Skin diseases, especially of the acute type, occur proportionately more frequently in children than in adults. The reason for this is not far to seek. Local and general conditions combine to reduce the normal resistance of the skin and to increase its susceptibility to pathologic changes. Exposures to injurious external agencies of mechanical, chemical and microbic nature are more common at this age. Lack of proper hygiene influences the condition of the skin considerably. Keeping the skin clean and soft is the best prophylaxis against trouble, but unfortunately there are wrong conceptions about this matter even among intelligent people. Harmful extremes are seen right along. There is no need of speaking of the fact that quite a number of eruptions are directly due to dirt. This acts on the skin mechanically and chemically, producing dermatitis and eczema and, by harboring pus cocci, inducing secondary infections such as impetigo and furunculosis. On the other hand, the modern tendency to carry the use of water too far also does a great deal of mischief. Hebra, the Nestor of dermatology, used to say that he observed more skin troubles in people who were overactive bathers than in those who were too sparing with their ablutions. The too frequent washing of the skin removes the natural lubrication without giving the fat-producing glands a chance to accomplish their duties. The skin grows dry and irritable, especially when an inherited tendency in that direction is present, and easily becomes a prey to skin diseases. The matter of soaps is quite important in this connection. Inquiries about them will often clear up the obscure cause of some obstinate skin trouble. Only the purest and mildest soaps should be employed for the skin of children, which is very tender and sensitive. There is no call for admixtures of chemicals or drugs in them. If these are needed, they can be applied more properly and accurately in other ways. This question may seem too trifling for much attention, but its consideration is attributable to the fact that people who are not instructed in this direction accept the claims of "patent-medicine" firms about their soaps, the purity and composition of which are unknown quantities and the usefulness questionable. At times the infantile skin does not tolerate water and soap at all. Trying to remove the scales and crusts with still more scrubbing is responsible for a vicious circle resulting in severe and apparently incurable skin eruptions.

A great factor in the prevalence of skin diseases in older children is the public school. Childhood is the only age at which a great number of persons come into promiscuous and intimate contact during the greatest part of the time. It would be interesting and instructive to learn the percentage of skin diseases originating in the schoolroom. Disseminated here are syphilis, tuberculosis, scabies, trichophytosis, impetigo, the acute infectious exanthems and others. Is this not sufficient reason that wherever medical inspection of schools is obligatory — and this should be insisted on in every school — the examining physician should have more than a smattering knowledge of dermatology?

The instability of metabolism and elimination in childhood are frequently contributing factors toward cutaneous affections. Their direct connection with urticaria is well known. The association of indigestion of fat and sugar with acute inflammatory eczemas has recently been pointed out by Towle and Talbot. Whether we believe skin eruptions to be purely local or not, the regulation of gastro-intestinal functions is always an

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important item of our therapeutics. Most of the breast-fed infants affected with eczema suffer from some dietary mistake. No general rules can be laid down for its correction and each individual case needs its own study and consideration. The feeding may be insufficient, excessive or irregular. If insufficient, the fault may be that the mother's milk is lacking in the necessary percentage of proteins and fat. This is especially the case with anemic women, an increase of sugar being present often in the milk to the detriment of the other solid constituents. More often it will be found, however, that the mother's milk is too rich and that the child is fed too often. Even under normal conditions the fat is not absorbed entirely and the normal feces contain about 10 per cent. of it. In abnormal cases the percentage of undigested fat may rise to 75 per cent. Infants' food should also contain a sufficient amount of water to increase the secretion of pepsin and hydrochloric acid and to assist the digestion. This is frequently neglected in breast-feeding. Constipation and diarrhea can often be traced to faulty feeding and retard the recovery from skin diseases. If the necessity arises, weaning must be resorted to and every means should be taken to find an artificial food of the right proportions. It must be remembered that the appearance of the child is often deceiving and that even if it appears stout and of the right weight signs of anemia may be in evidence and an examination will show the blood below par. Irregular and too frequent feeding is another frequent cause of digestive disturbances and requires regulation of the intervals between feeding and an early elimination of night feeding.

The diet of older children also needs careful supervision. The mistake of allowing them to partake indiscriminately of whatever food is served to adults is commonly made. When it is considered how often they are fed on sausage, cheese, pickles, sweets and other indigestible food up to the limit, it seems remarkable that no more harm is done. The control over the eating is still more important when the children are affected with skin diseases, and at times a plain milk diet becomes imperative.

Disturbances of the nervous system have more to do with causing skin diseases than is generally appreciated. The connection of dentition and eczema is probably due to such a cause. Rest and sleep are essential for the cure of acute skin diseases in children. Too much handling and petting of the sick child makes it irritable and restless and interferes with the efficiency of the treatment. It is a common experience to see children recover in a hospital under the same treatment which, applied by the mother at home, has proved a failure.

Not all these details may seem pertinent to dermatology, but their consideration is at least as necessary as the local applications and, unless the dermatologist becomes familiar with them, it would be better for him to leave the care of these cases to the pediatrician.

The nomenclature of skin diseases of children is just as unsatisfactory as in adults. Such names as pemphigus neonatorum, lichen urticatus, hydroa, scrofuloderma, etc., do not convey any meaning as to the pathology, symptomatology or etiology, often presume a classification which is doubtful, and are of no practical value. Until the time comes when all controversies regarding the nature of the different skin diseases are settled and the pathologic conditions are of avail for names and classification, their consideration on some practical basis would seem advantageous. For the reason that prevention and cure often depend on the knowledge of the cause, Adamson groups the skin diseases of children according to the etiology. He divides them into (1) congenital affections, (2) affections due to physical causes, (3) affections due to local parasitic action, (4) affections due to toxemias and general microbic infections, (5) affections of nervous origin and (6) affections of unknown origin.

In addition to the etiology another feature might be utilized. Many skin affections of childhood appear at certain periods either exclusively or by predilection. The reasons for this are known in some cases, while in others no satisfactory explanation has been brought forward. For example, the fact that the *Microsporon adouini* attacks the hair of children only is stated in every textbook, but Croker only, to my knowledge, attempts to explain it. He thinks that the greater resistance of the hair of adults prevents the invasion and penetration of the fungus into the hairshaft, but confesses that so long as the hair of the adult is no barrier against the *Megalosporon ectothrix* the age alone cannot be held responsible. Neither do we know why such diseases as prurigo, urticaria pigmentosa, etc., should occur in children only. By combining the usual period of occurrence of the skin diseases with their etiology whenever known, however, a grouping may be made incorporating exclusive characteristics of this age.

Such a classification would cover in a general way four groups: (1) congenital affections, like nevi, ichthyosis, syphilis, etc.; (2) affections occurring during infancy and childhood only, such as pemphigus neonatorum, urticaria pigmentosa, lichen urticatus, prurigo, xeroderma pigmentosum (the etiology of most of these is unknown); (3) affections predominating during childhood, among which belong impetigo contagiosa, miliaria, intertrigo and the acute exanthematous eruptions, which are due to the higher susceptibility and the lower resistance of the skin of children which permits the injurious action of micro-organisms and irritants; (4) all other affections which occur likewise in adults and are due to the same agencies. This classification is offered as a suggestion only and serves its purpose if it causes other efforts in the same direction.

Another feature which distinguishes the cutaneous affections of children is their deviation in symptomatology from that of adults. The lesions differ both in degree and in type. They assume a more acute and inflammatory character. Certain lesions like the erythematous, vesicular, pustular and bullous predominate over the papular, squamous and infiltrated. Furthermore, what would be called atypical in adults is frequently characteristic in children. Lesions of scabies occur not only in the usual locations, as the hands, feet, wrists, etc., but also on the head and the face. The wheals of urticaria, usually blanched in adults at first, from the compression of the capillaries, are often red from the beginning to the end in children. Impetigo assumes a great variety of clinical aspects and may simulate eczema, pemphigus and other affections. The bullous syphiloderm is seen almost exclusively in infants. The reasons for these changes must be looked for in the higher vascular irritability and the lower vitality of the epithelium. To one who has not given a special study to the skin diseases of children a diagnosis may become extremely difficult at times. The rule observed in adults, to depend for the diagnosis on some characteristic primary lesion, does not always hold good in children. It will be necessary to consider not only the existing cutaneous manifestations and the general symptoms, but also to study closely the developments and changes due to the peculiarities of childhood.

In regard to the therapeutics of cutaneous affections of childhood two general rules might be laid down:

The first is the correction of any causative or aggravating complication. This point has already been partly referred to. A few words may be added in regard to the internal administration of drugs. It is better to do too little in this direction than too much. There are only a very few drugs which have any direct action on the skin. Those used for adults, such as arsenic, mercury, iodids, etc., must be used with great caution, partly on account of their general effects, partly because the child's skin is much more liable to drug dermatitis, which might complicate or disguise the original trouble. The drugs usually needed are simple and indicated by the internal complications. An occasional purge with calomel or some other laxative, some iron tonic, and possibly a diuretic is usually all that is necessary. Antipyretics and opiates should be avoided as much as possible. The second general rule applies to the local management. It should be rather conservative than aggressive. The natural tendency of the skin is to recover to a normal condition if given a chance. Protection of the diseased skin is of the utmost importance. This means avoidance of irritations of whatever nature, exposure to air, water, heat or cold, scratching, the action of physiologic and pathologic secretions, from old and dried-up applications, etc. The number of the local applications which are necessary is limited. The tender skin of children does not tolerate and does not need any strong and stimulating action. The efficiency of the treatment does not depend so much on the knowledge of a great many different remedies as on the skill to recognize the indications and the proper method of application.

Brandeis Theater Building.

ABSTRACT OF DISCUSSION

Dr. William A. Pusey, Chicago: Some time ago I had an experience in the dietetics of childhood which interested and amused me not a little. I had been to see a child with a very severe infantile eczema. Several pediatrists of national reputation had already been consulted, and everything that expert knowledge could suggest had been done to put the child on a scientific diet, even to the extent of procuring a flock of goats to furnish the milk. On my way home, after seeing this patient, I met a woman carrying her 9-months-old infant. They were evidently poor, but the child had a remarkably smooth skin, was the very picture of health and was busily engaged in sucking at a green onion. I could not but contrast the condition of the two infants and think of how little we knew about dietetic disturbances. I do not mention this to advise green onions for babies or to disparage efforts at proper feeding, but to indicate how important the personal equation is in these cases. Aside from this, I thoroughly agree that intestinal disturbances are the basis of most cases of infantile eczema, and that in the treatment of these cases, careful regulation of the diet is very essential.

Dr. David Lieberthal, Chicago: To the cutaneous affections of childhood, which at times offer great difficulties, belongs infantile eczema. That this is caused directly by gastro-intestinal disturbances I do not believe. Seborrhea of the scalp, however, is of great importance, since it is a remnant of the vernix caseosa which if it does not disappear in due course, becomes the basis for the development of eczema. After this has been established, it will be aggravated and maintained by any alteration of the normal functions, especially those of the gastro-intestinal tract, which are frequently due to faulty feeding. Thus proper measures in this direction, as well as the correction of other abnormal conditions, will exert a beneficial influence on the course of the eczematous manifestations, although the latter will not disappear without local treatment. Many cases of infantile eczema would be prevented if the infant's scalp were regularly examined for seborrhea and the same properly treated. I believe that cases of infantile eczema could be managed with greater facility in a well-equipped hospital than in the home.

Dr. Burnside Foster, St. Paul: I do not know whether onions are good for infantile eczema or not, but I believe that a change in the diet is followed by good results, at least in some cases. This does not mean that a similar diet is indicated in all these cases; one infant may thrive on onions while another may be poisoned by the mere smell of them. We may see two or three children in the same family, fed on the same diet, and while one will be subject to eczema the others will be entirely well. The personal equation is a very important factor and we do not know much about it. According to my experience, however, I have found that a radical change in the diet of these patients will many times prove beneficial.

Dr. Everett S. Lain, Oklahoma, Okla.: Of all the stubborn and discouraging conditions I have had to treat, infantile eczema is the chief. I am inclined, however, to agree with Drs. Pusey and Foster in their remarks about the diet—at least, in a measure. I do not recall ever having seen a severe case of infantile eczema among the Indians. In fact, eczema is not at all common among them, as my statistics show. When we come to the subject of the regulation of the diet of these patients, I am inclined to say, "What is the use?" I have seen an Indian baby, covered with secretions, excretions and filth, which are allowed to remain on the skin until they are accidentally removed, feeding, perhaps, from a filthy breast or from a filthier bottle and surrounded with flies, and still many of these babies are apparently fat and healthy.

Dr. M. L. Ravitch, Louisville: The discussion thus far has shown how little we know about eczema in children. It also shows how little we know about the chemistry of the drugs we prescribe. I have long regarded overfeeding as an important factor in the etiology of infantile eczema. To my mind, increased irritability of the skin is due to the change in mineral metabolism, causing alteration of the chemism of the skin. Scientific observations coincide with empirical facts that nutrition and diet are important factors in treating infantile eczemas.

Dr. K. A. Zurawski, Chicago: I think one mistake we make in the treatment of these cases is that we do not discriminate, but treat all these children along similar lines. We treat the thin, wiry baby and the fat, flabby one, the robust brunette baby and the delicate blonde, all in the same way. We give them the same food; we administer the same remedies. We treat an Indian baby in the same way as we do a little Swede. We must generalize a little less and use more common, ordinary horse-sense; then we shall have better results. I have found that certain types of infantile eczema require more proteins while others require more carbohydrates, and if I treat my patients according to the indications, I find that they quickly get well.

Dr. Alfred Schalek, Omaha: The discussion was practically confined to infantile eczema, which was only a small part of my paper. I do not know anything more about the etiology of eczema than the rest of you, but the point I wish to emphasize is that any faulty gastro-intestinal function will aggravate the eczema and is apt to interfere with the beneficial effect of local treatment. It is important that the dermatologist should know something about the proper feeding of infants, as he is not always in a position to call on the various specialists for aid.

What Is Important and What Trivial in Research.—The man of research requires the power to see the mosquito on the monument and for the moment to forget the monument for the sake of the mosquito. It is so often the trivial thing which turns out to be important. It is of more concern to us to know the mosquito which holds the power of life and death than to contemplate the battle commemorated by the monument.—R. D. Carmichael in *Science*.

OCCLUSION OF THE POSTERIOR INFERIOR CEREBELLAR ARTERY

REPORT OF CASE *

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From a clinical and physiologic standpoint, lesions of a limited area, occurring at any level of the brain-stem, are of much interest. Any attempt to analyze the grouping of the afferent impulses in this region has always been attended with considerable difficulty. Impulses arising in the same peripheral system after reaching the first synaptic junction in the spinal cord are formed into groups by specific selection and by gradual filtration away into secondary tracts, and then traverse the cord, grouped according to their sensory qualities, in paths which are frequently isolated by disease.

All of those impulses underlying sensations of posture, passive movement and spatial discrimination, ascend in the ipsolateral dorsal tracts of the cord, grouped in such manner that lesions can not differentiate between the various components. All those impulses of a painful and thermal quality are grouped in the contralateral spinothalamic tracts and can be interrupted separately or *in toto* by very limited lesions. But lesions here make no distinction between pain of a deep or superficial quality. During the passage of these impulses from the cord through the brain-stem to the optic thalamus, the paths of passage are anatomically very closely associated.

Impulses underlying sensations of pain, heat and cold receive the regrouped secondary impulses of a like nature from the face and continue their course in paths apart from those conveying the other components, and can be interrupted without a disturbance of other paths, or any one or a combination of any two of these components of sensation may be interrupted in this area without the other one or two being disturbed, or epicritic pain may be grossly involved by the process, while the pressure algometer readings indicate only a partial loss of the deep pain sense over the corresponding areas. In the brain-stem the impulses underlying an appreciation of posture and passive movements take a separate course from that taken by those underlying spatial discrimination, and may be interrupted separately. Among the lesions occurring in the brain-stem, resulting in sensory disassociation is the limited degeneration secondary to occlusion of the posterior, inferior cerebellar artery.

To Drs. Henry Hun[1] and Ira Van Gieson belong the credit of reporting the first case of this condition in America. This case was reported in 1897. Since then Thomas[2] reported two cases in 1907, Spiller[3] two in 1908, Gordinier[4] three in 1911, and Courtney[5] one in 1912. Sixteen cases have been reported in Germany, two in France, and two in England, one by Wilson[6] in 1908, and one by Head[7] in 1911. The few cases reported would indicate that the condition is rare, and I believe that it is so as it is inconceivable that a lesion with such a definite and clearly defined symptom-complex should have been unrecognized, in many cases. The following case report indicates quite clearly the character of the symptomatology:

Patient.—J. S., man, aged 45, farmer by occupation, consulted me March 29, 1913, complaining of vertigo, numbness and inability to feel heat over right side, difficulty of using left arm and leg, tendency to rotate and fall to left and difficulty of swallowing. Family history had no bearing on present trouble. Patient had had usual diseases of childhood but no serious illness and no syphilis; drank to excess up to one year previously; had been married twenty years; has five children living, all healthy.

Present Illness.—Patient felt quite well March 13, 1913; ate heartily of pork and kraut at evening meal. He went to sleep early and slept soundly. About 2 a. m. he was awakened with loud roaring sound in head. He felt intensely giddy and vomited; attempted to sit up in bed but was unable to do so; head fell to the left and vertigo was increased. He was fully conscious and observed his symptoms intelligently. His left arm and leg felt paralyzed and the right arm and leg appeared numb. He could not swallow and his voice was husky. He perspired profusely but left face did not perspire nor has it up to the present time. He had horizontal and rotary nystagmus and double vision. His pulse was 42. A physician was called and diagnosed ptomain poisoning. On the following morning patient was unable to stand because of vertigo, could use left arm and left leg with difficulty, had tinnitus and decreased sense of hearing in left ear, had no perception for heat over entire right side below face. He was confined to his bed for about a week but was then able to be up and walk with assistance.

Examination.—I found him to be a well-preserved man of healthy appearance, weight 180 pounds, height 5 feet, 11 inches. Thoracic and abdominal viscera manifested no evidences of disease. The radials were palpable and blood-pressure was 210. Station and gait were both unsteady with tendency to fall and rotate to left, not increased by closing eyes. Motor Functions: Movements of muscles of face good, but expression not so lively on right side of face as on left, left side soft palate paralyzed and uvula pointed to right, swallowed all kinds of food with considerable difficulty. Tongue was projected in median line. Left arm and leg were slightly ataxic but there was no decrease of power.

Eyes: The eyes showed bilateral rotary nystagmus downward and to the left; the left pupil was smaller than the right, both responded equally well to light and accommodation but the left did not dilate so readily nor so thoroughly to shade as did the right. The left palpebral fissure was narrower than the right and the left eye was very slightly retracted into the orbit. Fundi of both eyes appeared normal. The tendon and skin reflexes were active but showed no abnormalities. It was in the sensory field I found the chief and most characteristic disturbances. The vision was good and there was no diplopia at this time.

Smell, Taste and Hearing: Sense of smell and taste were not impaired. The sense of hearing was not quite so good in left ear as in the right and he complained of a sensation of buzzing in his left ear.

Spontaneous Sensation: He complained of numbness over the left side of the face, right arm, leg and trunk. His idea of the right arm, hand, leg and foot were not so good as of the left.

Touch: Light touch as tested with cotton wool and Von Frey's hairs was equally good on both sides but patient's appreciation of hair stimulation over the left cornea was not so good as over the right. Pressure touch as tested with the esthesiometer showed no differences between the two sides. He could appreciate the weight of two grams over both sides of face, trunk and extremities.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Hun, Henry: New York Med. Jour., 1897, lxv, 513, 581 and 613.

[2] Thomas: Cases of Thrombosis of the Posterior-Inferior Cerebellar Artery, Maryland Med. Jour., 1907, l, 204.

[3] Spiller: Jour. Nerv. and Ment. Dis., 1908, xxxv, 365.

[4] Gordinier: Occlusions of the Posterior-Inferior Cerebellar Artery; a Definite Symptom-Complex, Albany Med. Ann., 1911, xxxii, 565.

[5] Courtney: Occlusion of the Posterior-Inferior Cerebellar Artery, Boston Med. and Surg. Jour., 1912, clxvi, 329.

[6] Wilson, S. A. K.: A Case of Thrombosis of the Left Posterior-Inferior Cerebellar Artery. Proc. Roy. Med. and Chir. Soc., London, 1908-09, ii, 52.

[7] Head: Sensory Disturbances from Cerebral Lesions, Brain, London, 1911, xxxiv, 117.

Localization: There were no differences between the two sides.

Roughness: A sense of roughness was perceived over right face and on both sides over trunk and extremities when the tooth of the Graham-Brown esthesiometer was projected 1 mm., but it was necessary to project it 3 mm. for a perception of roughness over left face. Over right face he could differentiate between a 00 and 0 sandpaper. Over left face it was necessary to use a 00 and 1½ in order that he might perceive a threshold difference.

Vibration: No difference between the two sides.

Compasses: Perception of two points equally good over two sides when applied simultaneously or successively.

Pain: The perception of superficial pain was much decreased over left face and right side below face. Patient had a sense of pain over right face and left side when the prick algesimeter was applied with a pressure of 2 gm., but there was no perception of pain when it was applied to the left face and right side with a pressure of 10 gm. The dragged point of a pin immediately appeared dull when the median line was crossed from right to left face and from left to right trunk. He could differentiate between the head and point of a pin when applied to left face, right trunk and extremities but point felt dull. Pressure-pain sense was considerably impaired over right trunk and extremities. The pressure algometer registered as follows, the readings being in kilograms of pressure: left deltoid, 5; right, 8; left forearm, 9; right, 12; left palm, 10; right, 14; left nipple, 8; right, 12; left tibia, 4; right, 8; left sole, 5; right, 10. There were no differences between the two sides of the face.

Temperature: The threshold difference for heat and cold was the same over both sides of the face, but the perception of temperature was not so keen over the left as the right. I was unable to establish a threshold difference over the right trunk and extremities. The patient stated that all temperatures over these areas gave a sensation of cold. His recognition of posture of right arm and leg were slightly diminished and measurements made with the Gordon Holmes apparatus demonstrated that his perception of passive movement was not so good for right arm and leg as for the left. He could perceive flexion and extension of left index with a movement of 2½ degrees but it was necessary to flex the right index 7½ degrees and extend it 9 degrees to evoke a sensation of movement. His appreciation of weight, size, shape, form, texture and consistence did not vary as between the two sides.

ANATOMY

The following anatomic structures are involved in this condition: The posterior-inferior cerebellar arteries are the longest branches of the vertebrals and have their origin from them opposite the lateral surfaces of the medulla oblongata near its middle portion or just about 2 cm. below their union to form the basilar. Each vessel passes outward and backward across the restiform body and between the pneumogastric and hypoglossal nerve roots; it then passes to the under surface of the cerebellum where it divides into two branches, an internal or inferior vermiform branch and an external or hemispheral branch.

The inferior vermiform branch passes backward between the vermiform process and cerebellar hemisphere, supplies the vermiform process and anastomoses with the vessel of the opposite side and the superior vermiform, a branch of the superior cerebellar artery. The hemispheral branch is distributed to the under surface of the cerebellum and anastomoses with the middle and superior cerebellar arteries.

As the inferior cerebellar artery winds around the medulla oblongata it gives off several terminal end arteries which supply the lateral field of the formatio reticularis and restiform body. The anterior and median areas of the medulla oblongata are supplied by branches of the anterior spinal arteries and the olivary bodies by the lateral branches from the vertebrals. Hence an occlusion confined to either one of the inferior cerebellar arteries would not injure the hypoglossal nuclei or other nuclei on the ventricular floor, the posterior longitudinal bundles, mesial fillet, anterior pyramids or olivary bodies. The cerebellum would be in no wise compromised because of the free anastomosis between this artery and its fellow of the opposite side, together with the superior and middle cerebellar arteries.

The area of softening in the lateral field of the medulla oblongata, as shown by the careful studies of Hun and Van Gieson, Spiller and Thomas, is sharply limited to the formatio reticularis grisea and restiform body and has a vertical extent from about the middle of the hypoglossal nucleus to the point at which the restiform body passes into the cerebellum. Its greatest anteroposterior extent is from the dorsal blade of the lower olive to the restiform body. The parts usually involved are the ventrolateral spinocerebellar tract of Gowers, the dorsolateral spinocerebellar tract of Flechsig, the vestibulospinal and descending trigeminal tracts, brain-stem extension of the spinothalamic tract, cerebello-olivary fibers, nucleus ambiguus, vasomotor and sympathetic fibers and other fibers which pass via the restiform body. The auditory nuclei and nerves are occasionally involved, while the facial and abducents are rarely implicated unless the thrombus extends into the vertebral.

SYMTOMATOLOGY

As stated above the symptomatology of occlusion of the posterior-inferior cerebellar artery is definite and clearly defined. Spiller formulated a symptom-complex from the cases which he studied. A comparison of the symptomatology as presented by the case as reported with his symptom-complex shows some differences. Following are the important symptoms as manifested:

1. Sudden onset without loss or disturbance of consciousness.

2. No paralysis or paresis of the muscles of the extremities or the muscles innervated by the fifth nerve (owing to the motor paths contained in the ventral pyramids being supplied by the vertebrals and anterior spinal arteries), while the nucleus and axones of the motor fifth are nourished by the basilar.

3. Diminution of the epicritic pain and thermal sense over side of face corresponding to lesion. An algesia with raising of the algometer readings and complete loss of sensation to heat and cold over contralateral half of body below lesion. Paresthesias in the area of disturbed objective sensation.

4. Tactile sensation, intact in all points, diminution of sensation of roughness over ipsolateral side of face.

5. Diminished recognition of posture and passive movement in contralateral arm and leg. All spatial discrimination was perfect.

6. Incoordination in limbs corresponding to side of lesion.

7. Slight cerebellar ataxia with tendency to fall toward side of lesion. This tendency was not increased by closing the eyes.

8. Nystagmus bilateral, more intense when eyes are directed toward side of lesion.

9. Ménière's symptom-complex; vertigo, revolving vertigo, auditory hallucinations, vomiting, deafness on side of lesion.

10. Paralysis of muscles of deglutition soft palate and larynx on side of lesion causing much difficulty of deglutition with loss of phonation.

11. Sympathetic disturbances on side of lesion, causing smallness of pupil, narrowing of the palpebral fissure, retraction of eyeball and loss of sweating in the face on same side. The reflexes were plus but of no special significance.

3001 The Paseo.

THE SOLUBILITY OF LEAD SALTS IN HUMAN GASTRIC JUICE, AND ITS BEARING ON THE HYGIENE OF THE LEAD INDUSTRIES [*]

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AND
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The following investigation was undertaken at the request of Dr. Alice Hamilton, special investigator of lead-poisoning for the federal Bureau of Labor, because of the availability in our laboratory of normal human gastric juice.

The relative importance of the skin, the lungs, and the digestive tract as avenues of the lead absorption in workers in the lead industries seems to be determined only to this extent that the skin is the least important. While lead may be absorbed through the intact skin under special conditions of prolonged application of lead compounds to the skin, it may be questioned whether under ordinary working conditions absorption through the skin contributes to industrial plumbism. There remains, then, to consider the lungs and the digestive tract. Meillère[1] seems to show that while poisoning may occur by absorption of lead from the lungs, this is not a channel of absorption of practical importance in the industries. Goadby,[2] on the other hand, concludes that absorption from the lungs is the prime factor in most forms of plumbism. Goadby subjected cats to breathing air charged with various kinds of lead dusts. Lead-poisoning resulted in every case. The only precaution taken against lead dust reaching the stomach was brushing as much of the lead dust as possible from the animals' fur at the end of every inhalation period. It is therefore certain that some of the lead dust was swallowed with the saliva and the mucus from the respiratory passages. But Goadby's experiments seem to show that when the same lead dusts are given by mouth a much greater quantity is required than in the case of inhalation, the ratio estimated being 100:1. Thus, one cat (No. 12) was fed 0.8 gm. dry white lead a day for eighteen months without producing any other symptoms than some loss of weight. Other cats fed similar quantities of white lead daily developed symptoms only when alcohol was administered at the same time. This extraordinary tolerance of cats to dry white lead by mouth cannot be accepted as normal, in view of the results of our own feeding tests with white lead to dogs and cats. Legge and Goadby[2] point out that, on the whole, cases of lead-poisoning are most frequent in the industries in which the lead dusts are not adequately controlled. This is unquestionably true, but it does not follow that this lead dust enters the body mainly, or at all, by the lungs.

The lead dust, like any other dust, settles all over the person exposed to it. It permeates his clothes, and settles on the skin, the hair, in the mouth and in the respiratory passages. In the mouth the dust acts as a stimulus to salivation, and in an animal like the cat, which does not expectorate, this increases the frequency of swallowing. Some men are in the habit of swallowing the mucus from the trachea—and even that from the nasal passages. It is, therefore, obvious that the chances for swallowing lead increases greatly with the presence of lead dust. At the same time some of the lead dust particles must reach the alveoli of the lungs, and may pass into the body without solution like particles of carbon. But most of the lead dust that penetrates down to the bronchioles and alveoli must, unless dissolved, become entangled in the film of mucus and eventually be passed out by way of the trachea. It is well known that after breathing coal dust or dense smoke for an hour a man may continue to discharge carbon-stained mucus from the trachea for more than twenty-four hours. It is obvious that only an insignificant fraction of the insoluble dust in the respired air is taken up by the alveolar cells, or by the leukocytes and retained by the lymph-nodes. The carbon particles in the lungs and lymph-nodes of an old coal-miner or a stoker probably amounts to less than a gram, while the quantity of carbon passed in and out of the lungs by way of the trachea must have reached many kilos.

Lead-poisoning occurs in industries in which no lead dusts are produced. And since lead dust in the respired air increases the chances of lead dust entering the stomach, it is clear that the digestive tract is in some cases the sole, and probably in all cases, the most important avenue of absorption of the lead in industrial lead-poisoning.

There is no evidence that the lead salts are absorbed from the digestive tract or act locally on the mucosa, except when in solution. The strongest solvent in the digestive tract for the lead salts is the hydrochloric acid of the gastric juice, and of less importance the lactic acid, and other organic acids produced in the course of hydrolysis of proteins and of fats and of bacterial activity. In view of the humane and economic importance of lead-poisoning in the industries, the literature on the action of the gastric juice on the different lead salts appears fragmentary. It was even assumed until recently that lead sulphate is practically insoluble in the stomach and intestines. This view led to the practice of giving sulphuric acid lemonade to lead workers as a prophylactic measure. Blum,[3] Goadby,[4] Schicksal[5] and Beck[6] have studied the solubility of various lead salts in dilute hydrochloric acid, in various artificial gastric digest mixtures, and in gastric juice. All agree that the lead sulphate is soluble in these mediums. One of Goadby's two experiments with human gastric juice (10 c.c. gastric juice plus 0.1 gm. of the lead salts, at 37 C. [98.6 F.], for one hour) appears to show that the lead sulphate is more soluble than is lead carbonate (white lead) or lead oxid (litharge). The second experiment showed practically the same solubility for the three salts. The work of Blum and Schicksal indicates that the presence of peptone in gastric digest mixtures increases slightly the solubility of the lead salts.

MATERIAL

Samples of paint dust of basic lead carbonate and basic lead sulphate, respectively, were sent us by Mr. A. M. Johnson, chief chemist of the Pullman Company. Mr. Johnson stated that the samples submitted were typical of the paint dust produced in the Pullman shops by sandpapering painted metal. The dust samples contained, per gram, lead corresponding to the following quantities of lead sulphate: basic lead carbonate paint dust, 1.04, 1.04 and 1.06 gm., respectively, 1.05 gm. average of three samples; basic lead sulphate paint dust, 0.86, 0.87 and 0.82 gm., respectively, 0.85 gm. average of three samples.

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[*] Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[*] From the Hull Physiological Laboratory of the University of Chicago.

1. Meillère: Le Sâturnisme, Paris, 1903.
2. Goadby: Jour. Hyg., Cambridge, 1909, ix, 122. Goadby and Goodbody, Lancet, London, 1909, ii, 988. Legge and Goadby, Lead-Poisoning and Lead Absorption, London, 1912.
3. Blum: Wien. med. Wchnschr., 1904, liv, 538; Deutsch. med. Wchnschr., 1912, xxxviii, 645.
4. Goadby: Jour. Hyg., Cambridge, 1909, ix, 122.
5. Schicksal: Die Bekämpfung der Bleigefahr in der Industrie, 1908.
6. Beck: Arb. a. d. k. Gesndhtsamte, 1910, xxxiv, 446.

Samples of sublimed white lead (basic lead sulphate) and of lead carbonate ("Old Dutch Process") were sent us by the Pilcher Lead Company, Joplin, Mo. These samples were not mixed with oil. On analysis they were found to yield per gram the following quantities of lead sulphate: lead carbonate, two samples, 1.12 gm. each; basic lead sulphate, two samples, 0.98 and 0.96 gm., respectively, 0.97 average.

Normal human gastric juice was obtained from a man 27 years old, with complete constriction of the esophagus and a gastric fistula of sixteen years' standing.[7] The juice was secreted while the man was chewing palatable food when hungry. Hence it was normal "appetite" or "psychic" juice, not mixed with saliva. The total acidity varied from 0.40 per cent. to 0.52 per cent.

I. THE RELATIVE SOLUBILITY OF LEAD CARBONATE AND LEAD SULPHATE (PAINT DUSTS AND PURE SALTS) IN GASTRIC JUICE

The results are given in Tables 1 to 4. The lead carbonate proved in every case to be much more soluble than the lead sulphate. The lead carbonate paint dust is nearly as soluble as the pure white lead, while the lead sulphate paint dust is less soluble than the pure basic lead sulphate. We are at a loss to account for Goadby's results showing greater solubility of the lead sulphate in gastric juice, except on the hypothesis of faulty methods. A greater solubility of lead sulphate than of lead carbonate in gastric juice seems a chemical impossibility. We note that Goadby records only two tests and the lead was determined after centrifuging the digestive mixture instead of in clear filtrate. It seems probable that varying quantities of the lead salts were present in suspension in addition to that which was present in actual solution.

Peptone in concentrations of 0.2 per cent. and of 1 per cent. does not have any marked influence on the solubility of the lead salts, but the influence of peptone, so far as it is in evidence, is in the direction of increasing the quantity of lead dissolved. The formation of lead peptone compounds might lead to the setting free of the chlorin ions in the lead chlorid, and thus to the formation of more lead chlorid from the carbonate and the sulphate. Our figures show that this is not an important factor in lead-poisoning from the digestive tract.

The solubility of the lead salts in pure gastric juice is practically the same as that in similar quantities of 0.5 per cent. hydrochloric acid. It is therefore clear that the hydrochloric acid of the gastric juice is the all-important solvent. Pepsin, rennin, and other organic constituents may combine with the lead salts when in solution, but if this is the case the reaction does not appreciably affect the quantity of lead salts held in solution.

We were especially interested in the action of milk on the solubility of the lead salts in human gastric juice and weak solutions of hydrochloric acid, in view of the fact that in some places lead workers are required to drink milk before starting work. And practical experience seems to show that milk or other food in the stomach minimizes the danger of lead-poisoning from the digestive tract. When milk and gastric juice are mixed in the proportion of one to one, lead salts added and the mixture incubated at body temperature for ten hours, not enough lead goes into solution to give a qualitative lead test. In two cases a positive qualitative test was obtained when the lead carbonate paint dust was used. The same results are obtained in mixtures of milk and 0.05 per cent. hydrochloric acid. But when the ratio of the gastric juice or hydrochloric acid to the milk is increased the lead salts are dissolved in proportion to the increase in the quantity of gastric juice or hydrochloric acid (Table 4).

The foregoing action of milk is probably due to the fixation of the hydrochloric acid by the milk proteins and the neutralization of the hydrochloric acid by the carbonate of the milk. Hence, when an excess of milk is added to the gastric juice there will be no hydrochloric acid to effect solution of the lead salts, while in the presence of an excess of gastric juice some free hydrochloric acid remains to act on the lead. We are inclined to the view that the formation of insoluble lead albuminates is a factor of minor importance in the above-mentioned action of milk.

These experiments *in vitro* do not reproduce some of the conditions that obtain in normal gastric digestion. The fixation of the hydrochloric acid by the proteins takes place in the stomach as well as in the test-tube, so that the presence of proteins retards the appearance of free hydrochloric acid in the contents of the stomach. But the work of Cannon and others renders it highly probable that relaxation of the pyloric sphincter and entrance of the gastric content into the duodenum is ordinarily preceded by the development of some free hydrochloric acid in the pyloric portion of the stomach. This hydrochloric acid will, of course, tend to dissolve any lead salts in the chyme until it is neutralized in the duodenum. Albuminous foodstuffs can therefore diminish the solution of lead salts in the stomach only to the extent that they fix the hydrochloric acid in the gastric juice.

The taking of milk is a more efficient prophylactic measure than the taking of an equal amount of other forms of proteins, because there is less appetite secretion of gastric juice with milk, and the fat in the milk depresses and retards the action of gastric secretagogues.

II. THE ACTION OF BILE ON THE LEAD SALTS

The ferments of the pancreatic juice and the intestinal juice have, of course, no action on the lead salts, except indirectly in case of lead albuminates and similar combinations, formed in the stomach by lead salts already in solution. The solution of lead salts in the intestines must therefore depend on the weak organic acids produced in the hydrolysis of the foods, or bacterial action, and on the alkalinity of the digestive juices poured into the intestine.

Normal pancreatic juice was not available to us, but a number of tests were made of the possible solution of the lead sulphate and the lead carbonate paint dust in dog-bile and ox-bile. When mixed in the following proportion, 25 c.c. bile plus 25 c.c. water plus 0.5 gm. of the lead salt, with or without peptone, at 38 C. (100.4 F.), for ten hours, not enough of lead went into solution to give a qualitative test for lead. This applies to both the carbonate and the sulphate paint dusts. The presence of peptone had no effect.

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[7] Carlson, A. J.: Am. Jour. Physiol., 1912, xxxi, 151.

III. THE RELATIVE TOXICITY OF BASIC LEAD SULPHATE AND BASIC LEAD CARBONATE (PAINT DUSTS AND PURE SALTS) WHEN FED TO DOGS AND CATS

Since it is not possible in experiments *in vitro,* even when normal gastric juice is available, to reproduce some of the essential conditions of gastric digestion, the final solution of the question of the relative toxicity of the different lead salts must be sought by feeding experiments. Goadby fed various lead salts to cats. Five cats received from 0.5 gm. to 0.8 gm. dry white lead (lead carbonate) per day for periods varying from one to eighteen months. According to Goadby this quantity of lead carbonate per day produced practically no symptoms unless alcohol was given at the same time. One must infer from Goadby's work that cats are unusually resistant to lead salts given by mouth. In an earlier work Leymann[8] showed, however, that even the slightly soluble lead sulphate produces toxic symptoms in eight or nine days when fed to cats in quantities of 0.2 gm. per day. Blum[9] concludes that the sulphate is less toxic than the other lead salts employed in the industries.

FEEDING EXPERIMENTS (SERIES I)

Dogs of nearly the same size and age were selected, and 4 gm. of the lead sulphate and the lead carbonate paint dusts respectively were fed to the dogs in ground meat, either in one feeding or in two feedings, eight hours apart. The results are summarized in Table 5.

The feces of Dogs A and B (Table 5) were collected for six days after giving the lead paint dust per mouth, and the quantity of lead determined, with the following result:

Dog B, fed 4 gm. basic lead carbonate, containing 4.16 gm. lead determined as sulphate. Lead recovered in the feces, 2.61 gm. or 62 per cent.

Dog A, fed 4 gm. basic lead sulphate, containing 3.28 gm. lead determined as sulphate. Lead recovered in feces, 3.10 gm. or 94 per cent.

The lead in the feces of Dogs C and D was not determined.

FEEDING EXPERIMENTS (SERIES II)

Eight dogs were selected for this test, and grouped in pairs of approximately the same body-weight. One of the dogs of each pair was fed the sulphate paint dust in meat, the other one given the carbonate paint dust in meat. The quantity of the lead paint dusts given each dog was fixed to equal 0.1 gm. lead sulphate per kilo body weight. The dogs fed the sulphate paint dust thus received a greater quantity of the dust, as this dust contained a lower percentage of lead than the carbonate paint dust.

The results are summarized in Table 6. The table shows that the dogs receiving the lead carbonate paint dust developed severe symptoms of acute lead poisoning within from twenty-four to forty-eight hours after the first feeding, while the dogs fed the sulphate paint dust showed very mild symptoms of lead intoxication only after three or four feedings, that is, after from seventy-two to ninety-six hours. Feeding experiments as tests of relative toxicity break down, of course, as soon as vomiting or lack of appetite appears, as one cannot control the quantity of lead salts eaten or retained. For that reason the experiment was discontinued as soon as there appeared symptoms of intoxication in the dogs receiving the least toxic lead salt, that is, the sulphate.

FEEDING EXPERIMENT (SERIES III)

The results of the feeding tests with the sulphate and the carbonate of lead to dogs do not agree with those of Goadby on cats. It does not seem likely that cats have so much greater tolerance than dogs to lead salts by mouth. Legge and Goadby claim, indeed, that cats are especially susceptible to lead-poisoning. Moreover, Leymann obtained symptoms in cats from feeding 0.2 gm. lead sulphate per day for eight to nine days. How are Leymann's results on cats and our results on dogs to be reconciled with Goadby failing to produce lead-poisoning in cats on feeding the more toxic lead carbonate in daily doses up to 0.8 gm. for two to eighteen months? It is difficult to understand where any material source of error might be concealed in the relatively simple process of mixing lead salts with the food and observing the animals.

Our own test series consisted of four healthy cats, which we may designate as A, B, C and D. The quantity of the lead salts mixed with the food each day was fixed to equal 0.1 gm. of lead sulphate per kilo body weight of cat. The amount of ground meat, fish or milk and bread with which the lead salts were mixed was less than each cat would ordinarily eat per day, so as to insure all of the lead salts reaching the stomach.

Cat A.—Fed 0.3 gm. lead carbonate per day. The first three days the cat did not touch the food, although a new lot was prepared each morning. On the fourth day the cat ate about four-fifths of the food. No symptoms were observed, but the cat did not touch the food for two days following. On the seventh to the eleventh day the cat ate about one-fourth of the food each day. No obvious symptoms of lead-poisoning.

Cat B.—Fed 0.37 gm. lead sulphate per day. Cat refused the food-lead mixture the first three days. The fourth day the cat ate all the food; on the sixth to the eighth day about one-third of the food. On the ninth day all the food was consumed, but on the two following days less than half of it was taken. No lead intoxication in evidence.

Cat C.—Fed 0.31 gm. basic lead carbonate paint dust per day. First day cat ate about three-fourths of the food-lead mixture; second day cat ate about half of the mixture. On the morning of the third day the cat had vomited a considerable mass of partly digested meat. The cat seemed depressed during the third to the eighth days and refused all food. During the ninth to the eleventh days the cat ate about one-fourth of the food each day. There were no further symptoms.

Cat D.—Fed 0.3 gm. basic lead sulphate paint dust per day. The cat did not touch the food-lead mixture during the first three days. On the remaining eight days of the feeding period the cat ate all the food on four days and on the other days about one-third of the food. No symptoms of lead-poisoning appeared at any time.

This eleven-day feeding period convinced us of one thing only, namely, that mixing the lead salts with the food is not a feasible method in the case of cats. Through taste or odor the addition of these small quantities of lead salts to the ground meat, fish or milk and bread renders the food mass so unpalatable that the cats will starve for days rather than eat, and one cannot be certain of the cat eating even a small portion of the food on any day. In a test of the relative toxicity of the two salts it is, of course, essential that all of the salts given shall reach the stomach each day. The method of mixing the lead salts with the food was therefore abandoned. A second series of four cats was selected and 0.1 gm. of the lead salts per kilo body-weight was administered in gelatin capsules each morning before giving the customary food. The results are given in Table 7.

The cats varied in weight from 2.5 kg. to 3.5 kg. Hence 0.25 gm. constituted the smallest and 0.35 gm. the largest dose of lead salts given per day. Toxic symptoms were produced by all the salts, but the lead carbonate and the lead carbonate paint dust were distinctly more toxic than the basic lead sulphate and the lead sulphate paint dust. The toxic symptoms noted were vomiting, loss of appetite, constipation and depression. The feeding period was too short for the development of the chronic nervous symptoms.

It will thus be seen that cats and dogs show about the same susceptibility to lead intoxication by mouth. Lead carbonate and lead sulphate when given daily in quantities up to 0.1 gm. per kilo body weight produce toxic symptoms within two to eight days.

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[8] Leymann: Arch. f. Hyg., 1892, xvi, 316.

[9] Blum: Deutsch. med. Wchnschr., 1912, xxxviii, 645.

IV. SUMMARY

1. *Solubility of White Leads in Human Gastric Juice*

WHITE LEAD PAINT DUSTS

Solubility in pure gastric juice (25 c.c. juice to 0.5 gm. lead):
Basic lead carbonate paint dust, 46%.
Basic lead sulphate paint dust, 5.7%.
Solubility in gastric juice + peptone (25 c.c. juice, 0.1 gm. peptone, 0.5 gm. lead):
Basic lead carbonate paint dust, 46%.
Basic lead sulphate paint dust, 7.3%.
Solubility in gastric juice + milk (juice 1 : milk 1):
Basic lead carbonate paint dust, none = 0%.
Basic lead sulphate paint dust, none = 0%.
Solubility in 0.5% HCl (25 c.c HCl to 0.5 gm. lead):
Basic lead carbonate paint dust, 66%.
Basic lead sulphate paint dust, 6.7%.
Solubility in 0.5% HCl + milk (HCl 1 : milk 1):
Basic lead carbonate paint dust, none = 0%.
Basic lead sulphate paint dust, none = 0%.
Solubility in 0.5% HCl + milk (HCl 2 : milk 1):
Basic lead carbonate paint dust, 25.4%.
Basic lead sulphate paint dust, 1.5%.
Solubility in 0.5% HCl + milk (HCl 4 : milk 1):
Basic lead carbonate paint dust, 83.5%.
Basic lead sulphate paint dust, 6.9%.

WHITE LEADS

Solubility in pure gastric juice (25 c.c. juice to 0.5 gm. lead):
Lead carbonate ("Old Dutch Process"), 53%.
Basic lead sulphate 25%.
Solubility in gastric juice + peptone (25 c.c. juice to 0.5 gm. lead):
Lead carbonate ("Old Dutch Process"), 57%.
Basic lead sulphate, 27%.
Solubility in pure gastric juice (50 c.c. juice to 0.5 gm. lead):
Lead carbonate ("Old Dutch Process"), 69%.
Basic lead sulphate, 30%.
Solubility in gastric juice + milk (juice 4 : milk 1):
Basic lead carbonate, 90.0%.
Basic lead sulphate, 34.8%.

2. *Toxicity of White Leads When Fed to Dogs and Cats*

The lead carbonate is much more toxic than the lead sulphate. But both salts produce acute lead poisoning when given in quantities of 0.1 gm. per kilo body-weight daily.

3. *The Influence of Milk*

When milk and gastric juice are mixed in the proportion of 1:1, the hydrochloric acid of the gastric juice is so completely fixed by the milk proteins or neutralized by the carbonates in the milk that the mixture has virtually no solvent action on the lead salts; but when gastric juice is present in excess the lead salts go into solution in proportion to the excess of the gastric juice. When milk is taken into the stomach there occurs, of course, a similar fixation of the hydrochloric acid, and, in addition, the total quantity of gastric juice is diminished owing to the inhibitory action of the fats in the milk on the processes of secretion.

4. *Practical Suggestions*

On the basis of our work we venture to offer these two practical suggestions:

1. The lead carbonate is so much more toxic than the lead sulphate that lead workers as well as the state should aim at the elimination of the use of the carbonate in all industries in which this is possible.

2. In addition to taking other important prophylactic measures the lead workers should drink a glass of milk between meals (say, 10 a. m. and 4 p. m.), in order to diminish the chances for any swallowed lead to be dissolved by the free hydrochloric acid of the gastric juice, as in some persons there is considerable secretion of gastric juice in the empty stomach.[10]

ABSTRACT OF DISCUSSION

Dr. E. D. Brown, Minneapolis: The old text-books give as the standard antidote for arsenic poisoning, which is probably the same for lead, the taking of milk, which helps to fix the acid in the gastric juice. This is undoubtedly in part the way of action. Recent investigators have shown, however, that the milk only delays the action of the arsenic and that eventually the arsenic will be absorbed and will exert its toxic effects.

Mr. M. I. Wilbert, Washington, D. C.: I should like to ask Dr. Carlson whether or not he has come across the empirical practice of administering olive-oil? I know that in one large manufacturing concern in Philadelphia it has been the practice to compel the employees to take olive-oil rather liberally. They furnish all the olive-oil that the employee will take, and it is asserted that since the establishment of the practice, there has been no lead-poisoning in that particular lead-works.

Dr. A. J. Carlson, Chicago: I have no experience in giving olive-oil. Olive-oil or any fat inhibits the secretion of gastric juice; but the importance of olive-oil is probably in keeping the bowel open and overcoming constipation which is one of the first troubles in lead-poisoning.

PHENOLSULPHONEPHTHALEIN IN ESTIMATING THE FUNCTIONAL ACTIVITY OF THE KIDNEYS

A FURTHER CONTRIBUTION TO ITS VALUE

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In a former paper Dr. Kristeller and I referred to a number of methods that have been devised for the purpose of estimating the sufficiency of the kidney function and have shown wherein they are unsatisfactory and impracticable. Up to that time we had made observations on fifty-eight subjects, giving seventy injections of phenolsulphonephthalein. These observations were made on healthy males and on a series of cases of chronic parenchymatous nephritis, acute diffuse nephritis, chronic interstitial nephritis and a few cases of enlarged prostate. The results obtained warranted the conclusion that the elimination of the drug went hand in hand with the elimination of the normal products of metabolism, a fact for which this method is bound to prove of greater value than any other devised.

We pointed out that phenolsulphonephthalein possesses the following advantages:

1. The drug does not readily decompose in solution and can be sterilized by boiling.
2. The dose required is small, 1 c.c. of the solution containing 0.006 gm. of the dye.
3. The injection is painless and is not followed by irritation if the solution is sufficiently alkaline.
4. The drug is excreted entirely by the kidneys.
5. The drug can be demonstrated in the urine in from three to ten minutes after the subcutaneous injection.

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[10] Hornborg: Skandin. Arch. f. Physiol., 1904, xv, 209. Carlson, A. J.: Am. Jour. Physiol., 1912, xxxi, 151.

6. From 50 to 70 per cent. is excreted during the first two hours.

7. The drug lends itself to accurate colorimetric measurement.

8. The quantity of the dye recovered in a specimen within a given time is not influenced by the volume of urine.

9. The presence of pus, phosphates, bile and indican does not interfere with the colorimetric estimation of this drug.

I am now prepared to state that the use of phenolsulphonephthalein, according to the methods devised by Rowntree and Geraghty, has convinced me that it is invaluable and I believe it to be the best of all the tests hitherto used for the purpose of estimating the functional activity of the kidneys in health and disease.

The method as originally described by Rowntree and Geraghty and as used by me is as follows: One cubic centimeter of the solution, containing 0.006 gm. of phenolsulphonephthalein, is injected intramuscularly. The solution should be previously sterilized by boiling and injected with a fine hypodermic needle.

The urine is collected in a vessel containing a few drops of sodium carbonate (Na_2CO_3) or sodium hydroxid (NaOH) solution. The patient is encouraged to void his urine every few minutes so that the time of the first appearance of the drug may be noted, which is easily discerned by the beautiful pink color which the urine assumes in contact with the alkali. The urine is then collected at the end of the first and second hours, consecutively. When the patient is unable to void his urine, in order to ascertain the first appearance of the dye, a catheter may be utilized, but fairly accurate results may be obtained by collecting the urine in one hour and ten minutes for the first specimen. This may obviate the necessity of repeated catheterization, as the introduction of a catheter for an hour is not without danger, and is very irksome to some patients. To ascertain the *functional activity of the individual kidney*, however, ureteral catheterization or the use of the segregator is required.

The average time for the first appearance of the dye in healthy adults is from three to ten minutes. The injection is painless and absolutely devoid of any untoward effects. Thus far I have failed to have a single infection in several hundred injections of the dye. Eight ounces of water should be given the patient about twenty minutes before the injection to insure free diuresis. The dye lends itself to accurate colorimetric estimation and for this purpose the Duboscq, the Helig or the Dunning apparatus may be used.

With the Duboscq apparatus, readings are made by the Vernier scale, and differences of 0.04 of a milligram can be detected. The Helig colorimeter is a modification of the Autenrieth-Koenigsberger hemoglobinometer. A standard alkaline solution (0.006 gm. of phenolsulphonephthalein to 1 liter) is placed in a wedge-shaped cell; the diluted urine is placed in a rectangular glass cup. The wedge-shaped cell is now manipulated by means of a screw, until the two sides of color-field are of the same intensity. The percentage is now read by the position of the indicator on the scale. I use this apparatus almost exclusively in my work and find it very simple and accurate. Dunning's apparatus consists of thirteen small bottles containing dilutions representing 100, 80, 60, 50, 45, 40, 35, 30, 25, 20, 15, 10 and 5 per cent. The readings are made by comparison. The simplicity and cheapness of this apparatus render it practicable but it is only relatively accurate and should be used only for rough estimates.

A filtered specimen is used for the determinations. The urine is diluted to 1000 c.c., two or three drops of sodium hydroxid (NaOH) are added and the solution is mixed thoroughly by pouring from one vessel to another. In normal adults from 50 to 60 per cent. of the phenolsulphonephthalein injected is recovered during the first hour.

Before relating my recent observations, it is of interest to recall the conclusions reached by Rowntree and Geraghty from their observations of the action of phenolsulphonephthalein in diseases of the kidneys and in various general diseases. They state that this drug is of immense value from a diagnostic and prognostic standpoint in nephritis, inasmuch as it reveals the degree of functional derangement, whether of the acute or chronic variety. In the cardiorenal cases the tests may prove of value in determining to what degree renal insufficiency is responsible for the clinical picture presented. The test not only has proved of value in diagnosing uremia from conditions simulating it, but has also successfully indicated that uremia was impending when no clinical evidence of its existence was present. The test has proved of great value in revealing the true renal condition in cases of urinary obstruction. It is here of more value than the urinary output of total solids, urea or total nitrogen, and enables the surgeon to select a time for operation when the kidneys are in their most favorable functional condition. The improvement in the renal condition in cases of urinary obstruction following the institution of preliminary drainage is strikingly indicated by this test. In unilateral and bilateral kidney disease the absolute amount, as well as the relative proportion of work done by each kidney, can be determined when the urines are obtained separately.

In the series of investigations with the phenolsulphonephthalein test which I am about to present, I have extended my observations so that they not only embrace the results of the test in normal and pathologic conditions of the kidneys, but also my observations in regard to the functional activities of the kidneys in a variety of general medical diseases, some of which have not hitherto been subjected to this test.

MEDICAL CASES*

LOBAR PNEUMONIA

The results seem to show that the activity of the kidneys was not appreciably altered by the disease. The average percentage recovered in two hours was 56. These cases presented severe symptoms. The activity of the kidneys, as shown by

TABLE 1.—LOBAR PNEUMONIA (5 TESTS)

Patient	Date	Gen. Cond.	First Appearance, Min.	Percentage Recovered			Remarks†
				1st Hr.	2d Hr.	Total	
M. S.	2/26/12	Good	5	36	13	49	Double Pneumonia.
	2/28/12	Good	4	66	18	84	
	2/29/12	Good	5	45	15	60	
I. B.	4/23/12	Good	..	55	trace	55	....
H. C.	4/25/12	Good	..	20	15	35	Pulmonary edema and endocarditis.

† Chemical and microscopic examinations negative.

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* The reaction in these cases was observed a few days after the crises. In this and the following tables, the amount of the drug given was 6 mg. in each case. The reaction was acid in all cases in this table.

chemical and microscopic analyses, was not impaired; these analyses were corroborated by the phenolsulphonephthalein test.

In the case of H. C. (Table 1) the diminished activity of the kidneys may be accounted for by the passive congestion in the presence of endocarditis and pulmonary edema; this is strikingly shown by the 35 per cent. output.

INFLUENZA

In influenza the output was found to be considerably diminished. The illness in these cases averaged two weeks.

TABLE 2.—CLINICAL INFLUENZA*

Patient	Date	General Condit.	Percentage Recovered		
			1 Hr. 10 Min.	2d. Hr.	Total
S. D.	12/26/12	Fair	22	10	32
L. T.	6/ 1/12	Good	32	14	46
I. Y.	5/ 8/12	Good	18	15	33

* The reaction was acid in each case. The chemical and microscopic examinations were negative. The cause of the diminished output in this disease will be made a matter of special study.

TYPHUS

In typhus fever, recently described as Brill's disease, according to most authors the involvement of the kidneys is rarely observed. Two of my cases, however, showed such involvement; one showed a severe acute nephritis with albumin, hyaline and granular casts; the others, a diminished output.

TABLE 3.—TYPHUS FEVER (BRILL'S DISEASE)*

Patient	Date	General Condit.	Percentage Recovered		
			1 Hr. 10 Min.	2d. Hr.	Total
M. K.	12/26/11	Good	8	10	18
L. K.	12/26/11	Good	6	10	16

* The reaction in both cases was acid. Chemical and microscopic examinations in case of L. K. showed albumin (trace), few hyaline and granular casts. The nephritis cleared up in thirteen days.

This is analogous with the results obtained in other forms of acute infectious disease, in which the urine was found to be negative on chemical and microscopic examination.

NEPHRITIS

In a series of cases of chronic nephritis, in which repeated tests showed a small percentage output, the prognosis was invariably fatal. Case 87 is a good illustration of this. There was interstitial nephritis, a faint trace of albumin, and occasional hyaline and granular casts; the patient died in uremic coma. Case 89 gave this history and likewise terminated fatally.

This was in contrast to Dr. Hess' case. The patient, B., a boy, aged 11, suffered with chronic hemorrhagic nephritis and the phenolsulphonephthalein output averaged 60 per cent. This boy steadily improved under treatment and was finally discharged from the hospital.

Patient I. F. (Case 46) had an acute nephritis with no definite etiology. He left the hospital forty-five days after admission, at which time the urine contained no albumin and no casts.

Patient I. G. (Case 54) also had an acute nephritis. (This case was also referred to under Typhus Fever.)

In patient J. G. (Case 1), after a period of rest and cardiac stimulation, the kidney activity was increased as the general condition of the patient improved.

TABLE 5.—DIABETES MELLITUS*

Patient and No.	Date	General Condition	Time of Appear., Minu.	Percent. Recov.			Chem. and Microscop. Exam.
				1st Hr.	2d Hr.	Total	
L. K., 5	2/28	Fair	10	22	23	45	0.8-2.8 per cent. glucose; no acetone or diacetic acid.
	2/29	Fair	5	30	12	42	Urea gr. v-oz. 1.
	3/24	Fair	12	15	8	23	Few hyaline casts.

* The reaction was acid in all cases.

Patient L. K. (Case 5), aged 26, had diabetes of one and a half years' standing, pruritus vulvae, furunculosis, edema of the lower extremities and moderate arteriosclerosis. The amount of glucose varied from 0.8 to 2.8 per cent. The patient became gradually worse and was finally discharged at her own

TABLE 4.—NEPHRITIS*

Patient and No.	Date	General Condition	Time Appear. Min.	Percentage Recovered			Chem. and Micros. Exam.	Remarks
				1st hr.	2d hr.	Total		
I. F., 46	12/20	Fair	..	10	20	30	Alb. trace. Many hyaline and granular casts.	....
I. G., 54	12/26	Good	..	6	10	16	Alb. marked trace. Occasional hyaline cast.	....
Y. B., 47	12/26	Good	..	10	10	20	Alb. trace, few hyaline and granular casts.	Chron. Interstitial nephritis
J. G., 1	2/26	Good	8	34	17	51	Alb. trace, few hyaline and granular casts.	....
	2/28	Good	7	22	38	60	Albumin trace	....
	2/29	Good	10	28	20	48	Alb. trace, few hyaline casts.	....
J. G.	9/25	Fair	..	37	15	52	Alb. ++, many hyaline and granular casts.	Acute nephritis
J. G.		Fair	..	9	10	19	Same findings.	Edema feet and legs.
87	10/ 8	Marked anemia	..	Trace	20+	20+	Alb. trace, occasional hyaline and granular casts.	....
	10/12	....	..	12	12	24	....	
	10/25	....	..	Trace	15	15+	....	Died of uremic coma.
	10/26	Poor	..	Trace	14	14 +	....	
89	11/15	Poor	..	..	Trace	Trace	Alb. trace, occasional hyaline and granular casts.	Albuminuria retinitis. Died uremic coma.

* The reaction was acid in all cases.

request. The tests show a gradually diminished output of phenolsulphonephthalein.

ACUTE SYNOVITIS

In a series of cases of acute synovitis of various origins, the average output of phenolsulphonephthalein was within normal limits.

GENERAL SERIES

In a series of fifty cases admitted to the surgical and medical services, with no symptoms referable to the genito-urinary tract, the urines normal both chemically and microscopically, the average output of phenolsulphonephthalein was from 60 to 90 per cent. for two hours.

Patient A. B. (Case 36), Russian, exhibited gastric symptoms eight days after admission, consisting of loss of appetite and vomiting and also complained of pain in the epigastrium, increasing weakness and loss of weight. An exploratory operation to find means of relieving pyloric obstruction was not undertaken on account of negative phenolsulphonephthalein.

HYPERTROPHIED PROSTATE

As stated in my previous report on the results of the phenolsulphonephthalein test in hypertrophied prostate, in cases of mechanical obstruction to the genito-urinary tract, I have found the test invaluable in determining the most favorable time for operative interference.

The clinical condition of the patient and the chemical and microscopic examination of the urine do not always offer a proper index to the condition of the kidneys in this disease. (See Case 55.)

Patient A. K. (Case 11), aged 69, had shown an intermittent glycosuria for about three years when he was admitted to the hospital with an enlarged prostate and acute epididymitis, non-specific in origin. He had a residual urine of 6 ounces

TABLE 8.—GONORRHEAL PROSTATITIS*

Patient and No.	Date	General Condition	Percentage Recovered			Remarks
			1st Hr.	2d Hr.	Total	
D. E., 35	6/11/12	Good	56	0	56	Retention. Cath. inserted 1 hour.
	6/30/12	Good	30	20	50	Voided. No retention. Dysuria.

* Reaction acid throughout; chemical and microscopic examination negative.

TABLE 6.—GASTRIC CARCINOMA*

Patient and No.	Date	General Condition	Time Appear.	Percentage Recovered			Remarks
				1st Hour	2d Hour	Total	
A. B., 36	6/20/12	Poor	..	Trace	Trace	Trace	....
	6/24/12	Poor	..	Trace	Trace	Trace	....
E. A., 44	12/26/11	Poor	..	15	15	30	Died 2/3/12
H. M., 3	2/26/12	Fair	..	45	16	61	Died 4/22/12
	2/28/12	Fair	10	25	12	37	....
	2/29/12	Fair	9	25	11	36	....
L. K., 23	5/15/12	Fair	..	35	15	50	Discharged unimproved
L. L., 37	5/20/12	Good	..	36	0	36	Refused exploratory
	5/24/12	Good	..	22	12	34	....

* The reaction in each case was acid, and chemical and microscopic examinations were negative.

SURGICAL CASES

TABLE 7.—HYPERTROPHIED PROSTATE

Patient and No.	Date	General Condition	Reaction	Percentage Recovered			Chem. and Micros. Examination	Remarks
				1st Hr.	2d Hr.	Total		
Z. R., 55	6/10/12	Fair	Acid	*	....	27	Negative	Suspect. Chr. Int. Neph. was refused operation.
J. L., 58	6/29/12	Fair	....	....	....	10	....	....
	7/ 1/12	Fair	....	....	....	8	....	....
A. K., 11	4/12/12	Good	Acid	12	10	22	No alb. no casts. Few pus cells.	....
	4/17/12	Better	Acid	32	20	52	Alb. trace	Refused operation, went home.
	6/17/12	Good	Acid	14	17	31	Few pus cells	....
	6/19/12	Better	Acid	*	....	37	....	....
	6/20/12	Better	Acid.	*	....	47	No alb., few pus cells.	Operated, disch. in 14 days.
M. B., 10	3/25/12	Good	Neut.	25	20	45	Alb. ++ no casts, few red and white blood cells.	....
	3/28/12	Good	Acid	30	20	50	Alb. ++ few red and white blood cells.	Path. report, adenoma.
Mr. N., 49	11/29/11	....	....	10	38	48	....	....
B., 50	12/30/11	....	....	22	8	30	....	Ureters catheterized.
				R. 12	R. 8			
				L. 10	L. 0			
S. L., 55	11/25/11	Poor	....	12	10	22	....	Was refused operation.
	11/27/11	Poor	....	10	6	16	....	
	11/28/11	Poor	....	17	10	27	....	

* Catheterized.

with a phenolsulphonephthalein output of 12 and 10 per cent. respectively, for the first and second hours. The patient was kept in bed for two weeks and with active diuresis and bladder irrigation the residual urine was reduced to less than 2 ounces, while the output of phenolsulphonephthalein was increased to 52 per cent. in two hours. He was discharged from the hospital and returned two months later with a residual urine which again averaged between 6 and 7 ounces; the phenolsulphonephthalein output was 31 per cent. Palliative treatment was instituted for three days and the phenolsulphonephthalein output increased to 47 per cent. Suprapubic cystotomy was then performed under cocain, quinin and urea hydrochlorid local anesthesia. Five days later the prostate was removed through the suprapubic opening under nitrous oxid anesthesia. The patient had an uninterrupted convalescence and was discharged in fourteen days. He was seen three and four months later when his general health had greatly improved and he emptied his bladder at normal intervals.

Patient Z. R. (Case 55) had enlarged prostate with complete retention of urine. Test was made but the phenolsulphonephthalein report was not waited for. The colorimetric estimation was reported at 27 per cent. A suprapubic opening was made into the bladder under local anesthesia, and drained as usual in a two-stage operation. The patient developed uremia from which he died. The prostate was not removed. There was no post-mortem. In view of the results of the phenolsulphonephthalein test, which led to the suspicion of chronic interstitial nephritis, the death from uremia is significant.

RENAL CARCINOMA

The following case with cerebral and meningeal manifestations emphasizes peculiarly the value of this test in establishing the diagnosis.

Patient T. K., a woman aged 54, was admitted to the medical service of the hospital in a stuporous condition, having manifestations of drowsiness, listlessness and apathy. The Wassermann reaction was negative; the cytology of the cerebrospinal fluid was also negative. Her symptoms were referable to cerebral and meningeal disease. The urine showed a slight trace of albumin, an occasional granular cast, and urea 10½ grains to the ounce (Doremus). The phenolsulphonephthalein examination showed only a trace in two hours. A rectal autopsy was performed. The kidneys showed almost complete destruction by carcinomatous infiltration and metastases were also found in the other viscera.

HYPERNEPHROMA OF KIDNEY

Patient J. K., aged 36 (Case 56), Russian, male, admitted on June 20, 1912, with a history of attacks of six weeks' standing; there was frequency of micturition and hematuria. On the day previous and the day of admission he began passing a considerable amount of blood in the urine and suffered cutting pain in the right flank, followed by vomiting and chilly sensations.

The patient was poorly developed and poorly nourished. He was a tailor by occupation. On physical examination, with the exception of a slight tenderness to deep pressure in the right lumbar region and an enlarged spleen, nothing could be elicited; the Roentgen ray was negative and the urine was negative and showed many red and white cells.

The results of the phenolsulphonephthalein examination were the following:

June 25 the ureters were catheterized; nothing was obtained from the left side; from the right ureter, 55 per cent. was recovered in two hours.

July 2, the ureters were catheterized again with similar results. Although the symptoms were referable to the right side, with the negative output of phenolsulphonephthalein on the left side, an exploration of the left kidney was determined on.

Operation was performed on July 3. The left kidney was exposed through a lumbar incision and was found to be very

TABLE 9.—RENAL AND URETERAL OBSTRUCTION (CALCULI)

Patient and No.	Date	General Condition	Reaction	Percentage Recovered			Chem. and Micros. Examination	Remarks
				1st Hr.	2d Hr.	Total		
L. K., 28	6/ 1/12	Fair	....	25 Rt. ureter	10 Voided	35	See No. 28	Preoperative
	6/ 9/12	Poor	....	25	15	40	....	Postoperative
	6/18/12	Poor	....	37	Trace	37+	....	....
	6/20/12	Improved	....	34	10	44	....	....
	6/24/12	Improved	....	22	21	43	....	....
	7/ 9/12	Fair	....	34	11	45	....	....
I. R., 17	4/ 1/12	Poor	Neut.	10	12	22	Alb. +++. No casts.	Preoperative
	4/25/12	Poor	Acid	Trace	Trace	Trace	Many pus cells. Some R. B. C.	Postoperative. Large amount passed through wound.
	4/27/12	Improved	Acid	10	10	20	Same	
	5/ 6/12	Improved	Acid	Trace	15	15+	Alb. Few R. B. C.	Most excreted in 2d hour.
R. S., 27	6/ 3/11	Poor	Acid	....	....	48	See under case record.	Urine collected for 2 hrs. collectively.
	6/ 6/12	Poor	Acid	34	10	44	....	Postoperative
	6/18/12	Poor	Acid	15	Trace	15+	....	....
	6/20/12	Poor	Acid	20	15	35	....	....
	6/24/12	Improved	Acid	28	16	44	....	....
	6/26/12	Improved	Acid	30	10	40	....	....
	6/28/12	Improved	Acid	37	Trace	37+	....	....
S. O., 30	6/ 5/12	Fair	Acid	15	15	30	Negative	Typical history. Never observed urine. While in hospital urine neg. Refused operation.
	6/ 7/12	Fair	Acid	43	8	51	Negative	....
	6/26/12	Fair	Acid	25	12	37	Negative	....
S. S., 37	6/ 6/12	Fair	Acid	18	7	25	Alb. tr. Many R. B. C. 1024.	Refused operation
R. R., 14	4/25/12	Good	Alk.	....	....	10	Alb. +++. Blood.	Postoperative
	4/27/12	Good	Alk.	10	32	42	....	....
	5/ 2/12	Good	Alk.	30	10	40	....	....

much enlarged. The kidney was firmly adherent to the diaphragm and spleen from which it was separated with great difficulty after resection of the twelfth rib. The pedicle of the kidney was very short and infiltrated. The pathologic report shows a hypernephroma with almost entire destruction of parenchyma and cortex.

RENAL CALCULUS

Patient L. K., No. 28, had a left renal calculus and pyonephrosis which was verified by x-ray and operated on. He had been operated on for a similar condition two years previously. The ureters were catheterized and 25 per cent. recovered from the right side for the first hour, while nothing was obtained from the left.

After the operation the output gradually improved. The function of the second kidney was restored as was demonstrated by the presence of the dye on the dressings.

This case is in some respects similar to the case of R. W.,[1] No. 1.

After the operation the patient ran a normal course for two weeks and then had an intermittent temperature; the urine at this time was negative. There was some rigidity over the upper abdomen.

An exploratory laparotomy was done on July 31. The remaining kidney on palpation was found to be somewhat enlarged, but otherwise negative. The wound was closed without drainage. Subsequently the patient ran a normal temperature and was discharged in good condition two weeks later.

The interesting feature of the preceding case was the fact that the subjective symptoms were entirely referable to the right kidney; the absence of phenolsulphonephthalein output, by repeated examinations, induced the surgeon to explore the left kidney.

The general series of diseases show good output, although all were hospital cases without apparent kidney involvement.

I have tried the intravenous injection of phenolsulphonephthalein and do not recommend it as a routine method.

DEDUCTIONS

In taking account of the information gained in these series of observations, the following points are particularly worthy of attention:

1. In clinical influenza the small output of phenolsulphonephthalein is out of line with the findings in other general diseases and a search for the reasons for this offer an opportunity for an interesting study, which we (the hospital staff and myself) hope to pursue in the near future.
2. The general series of diseases show a good output of phenolsulphonephthalein as a rule when there is clinically no evidence of kidney involvement.
3. The findings in regard to the value of this test, both from a diagnostic and prognostic standpoint, in nephritis confirm former conclusions in this respect and also the statement of Rowntree and Geraghty, that it reveals the degree of functional derangement, whether the nephritis be acute or chronic.
4. In several of my cases this test has revealed a degree of renal insufficiency, of which the clinical condition of the patient gave no evidence, but the existence of which has been confirmed by the fatal outcome of the case.
5. The test has served to demonstrate renal insufficiency in instances in which operation was contemplated and in which, though chemical and microscopic examinations were negative, subsequent developments confirmed the existence of the renal insufficiency.
6. In cases of ureteral or renal obstruction my findings are again in line with those of Rowntree and Geraghty in that I found a marked improvement, as indicated by the phenolsulphonephthalein test, following the removal of the obstruction.
7. In unilateral and bilateral disease of the kidney, the test has revealed the functional capacity of each kidney, and to such a satisfactory degree that, in some instances, it has assisted me to determine on the course of operative procedure. An absence or a very small output of the dye from one kidney with an increased output from the other side, indicates a seriously diseased kidney on the one side, with a compensatory hypertrophy of the other kidney.

I am indebted to Dr. S. Berkowitz, house physician of Beth Israel Hospital, for his valuable assistance in compiling these statistics.

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CARELESSNESS IN PHARMACY AS A REASON FOR A RESTRICTED MATERIA MEDICA *

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The federal Food and Drugs Act, June 30, 1906, and the several state laws of a similar nature that have become operative during recent years have served to stimulate the interest of federal and state officials in regard to the nature and composition of the medicines that are being dispensed in the drug-stores throughout the country. In connection with the compilation of material for the "Digest of Comments on the Pharmacopeia of the United States of America and the National Formulary," now being published by the Public Health Service of the United States, an effort is being made to reflect the published results of these several inquiries. For various reasons, largely because of the difficulties involved in making the necessary chemical examinations, the number or variety of drugs

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and preparations reported on at all frequently is rather limited, but sufficient material is available to suggest some necessary changes in the making and handling of medicinal preparations if uniform and definite results are to be expected from their administration.

A century or more ago, the drug and medicine business, in its specialized commercial form, frequently constituted a part of the business of the dealer in paints, oils, glass and dyestuffs. Further specialization in the several branches of business suggested the economic possibilities in the manufacture of pharmaceutical chemicals and later of galenical preparations. The latter branch of manufacture now also includes the production of an almost countless number of specialties, semiproprietary and proprietary mixtures that have done so much to discredit the science as well as the art of medicine and for a time at least threatened to place physicians on a par with, or even below, the ideals of the makers of the so-called "patent" medicines that are warranted to cure all the ills that humanity is heir to.

On the practice of pharmacy, as such, this specialization in the way of making medicines has had a distinctly deteriorating influence. The pharmacist or druggist, from being thoroughly well conversant with the appearance and properities of the limited number of drugs handled by him, half a century or more ago, and the making of all of the then used preparations in his own laboratory, has in the course of time degenerated into a buyer and seller of ready-made preparations, the identity, composition or efficiency of which he is not in position to control. In order to eke out a bare existence he has been virtually compelled to add numerous so-called "side-lines," so that with comparatively few exceptions the modern drug-store represents a much more complicated business than did the paint, glass and dyestuff combination of a century or more ago.

While it is true that the present-day aggregation of odds and ends, commonly designated as a drug-store, has developed into a neighborhood necessity, it is also true that so far as making for progress in the science or the art of medicine is concerned there is little to be said in its favor. The number and variety of articles that are in stock in such a shop preclude even a superficial knowledge of their nature or composition, and this general want of knowledge has served to develop a lack of interest in the more important or official medicaments that threatens to undermine the reliance of physicians in practically all drugs and preparations.

As pointed out above, there is a considerable mass of data available to show that the drugs dispensed in many so-called pharmacies are not so reliable as they should be. The inferiority or unreliability of drugs and medicinal preparations as dispensed in some of the now existing retail drug-stores is due to a number of factors, not the least important of which are carelessness, ignorance and cupidity either singly or combined. That the first of these factors is undoubtedly the more frequent cause of variability is evidenced by the accompanying table showing the proportion of six comparatively simple pharmaceutical preparations that were found to vary from the officially prescribed standards, during the years 1907 to 1911, inclusive. These figures were compiled from the Hygienic Laboratory Bulletins entitled "Digest of Comments on the Pharmacopeia of the United States and on the National Formulary," for the several years, and represent only the published reports.

TABLE SHOWING NUMBER OF SAMPLES OF SIX SIMPLE PHARMACEUTICAL PREPARATIONS REPORTED ON BY STATE AND OTHER CHEMISTS DURING YEARS 1907 TO 1911, INCLUSIVE

	Number of Samples. Examined.	Number of Samples. Rejected.	Approximate Percentage.
Lime-water	1,231	605	50
Solution of potassium arsenite.	317	221	70
Spirit of peppermint	809	518	60
Tincture of iodin	5,959	2,388	40
Tincture of opium	597	270	50
Tincture of nux vomica	279	83	30
Total number of samples	9,192	4,085	45

Out of a total of more than nine thousand samples of six Pharmacopeial preparations reported on during five years, more than four thousand, or approximately 45 per cent., were found to be not in compliance with the requirements of the Pharmacopeia. In many if not all instances the degree or the nature of non-compliance indicated gross carelessness in the making of the preparation rather than malicious intent to adulterate. Thus tincture of iodin, the preparation that is most frequently examined, because of the ease with which the chemical investigation is made, has been found to be both above as well as below the strength required by the U. S. P. In a very large number of instances the objectionable shortcoming has been found to be due to the absence of the potassium iodid, now required by the Pharmacopeia, and in such cases inquiry usually elicits the fact that the retail druggist is still making his preparations by the formula official twenty years or more ago, his multitudinous duties in connection with his varied stock in trade having evidently prevented him from keeping in touch with the changes that have been made in Pharmacopeial requirements. Lime-water, another simple solution, is frequently found to be comparatively free from calcium hydroxid, owing to the all too prevalent practice of refilling the jar or bottle containing the lime with tap-water or even well-water, quite regardless of the deterioration of the lime owing to the presence of carbonates. The shortcomings found in connection with other preparations are usually due to like carelessness or thoughtlessness in connection with their making.

This variability of pharmaceutical preparations, due to carelessness in their making, is but one of the objectionable features of the present-day oversupply of drugs and medicines and the superabundance of stores in which they are sold. Another and perhaps an even more important factor is that owing to the great number and variety of preparations now on hand in the pharmacy many if not all are in stock for months and even for years. Kept under variable conditions, without care or adequate supervision, some preparations will deteriorate more rapidly than others and this naturally entails a degree of variability that must of necessity make for unsatisfactory results when the medicine is administered to a patient.

Reports on the deterioration of medicinal preparations are all too common and it is therefore not necessary to enumerate specific instances at this time. In general it is known that the conditions under which drugs, chemicals and galenical preparations are kept has much to do with their appearance, properties and efficiency. Up to the present time, however, we have too little positive knowledge of the changes involved in the deterioration of various substances, and much additional work and careful observation will be required to demonstrate clearly that the influences of air, moisture and sunlight on drugs and galenical preparations are many and varied, and that they may so alter a medicine as to make an ordinarily active preparation practically inert, if not actually harmful.

Federal and state pure drug laws and the many laws designed to restrict and to regulate the practice of pharmacy are logically interpreted to mean that the licensed pharmacist is in a position to protect the purchaser by exercising a constant supervision over articles kept in stock and by selling only such drugs and preparations as will comply fully with the standards established for them.

The difficulties that are involved in this assumption become evident when we realize that the several books that have been recognized as standards for drugs and preparations include descriptions for more than five thousand articles and that, in addition, there are probably fifty thousand articles of a proprietary or semiproprietary nature that are not described in any of the recognized books of standards, but are on sale, and frequently in a poorly preserved condition, in the drugstores of this country.

The immense number of articles of a medicinal character carried in stock by the retail druggist, even if all of his time and the time of his employees were devoted to the study and care of these articles, would make it practically impossible to exercise the degree of supervision and care in testing that is theoretically required by the Pharmacopeia of the United States. Under present-day conditions practically no check is exercised in the pharmacy over drugs, chemicals or galenical preparations, and despite any care that may be exercised at the time of making, to adjust preparations to established standards considerable change may have taken place in the composition of these preparations before they finally reach the consumer.

The existing conditions and the possibilities may be summed up somewhat as follows:

The present-day drug-store with its numerous accommodations for the public has developed into a neighborhood necessity that can be continued with or without the strictly drug feature of the establishment.

In connection with a general collection of "side lines" it is impraticable for even the most careful and expert pharmacist to exercise any degree of supervision over the many drugs and preparations that must now be carried in stock.

In a shop devoid of "side lines" that is equipped with the necessary analytical apparatus it would be possible to exercise efficient control over a reasonable number of well-defined medicaments, and the physicians of the country, if they will but take an active interest in evolving a restricted or preferred materia medica list, can contribute much toward developing the sciences relating to pharmacy to such an extent that it may be a potent factor in the progress of the healing art and thus in turn a factor in promoting the welfare of the public at large.

Twenty-Fifth and E Streets N.W.

ABSTRACT OF DISCUSSION

DR. TORALD SOLLMANN, Cleveland: I imagine that the 50 per cent. of deficiencies perhaps does not reflect the actual condition of affairs. One must know how serious these differences were; then, again, where samples were taken. It is easy to standardize. It is simply a matter of enforcing the standardization. The faults are not due to dishonesty, but are due to carelessness. Why should not carefulness be enforced? We have state and federal laws for that purpose. The officials have mainly confined themselves to foods and patent medicines and have done fine work, and it should not be lessened one bit, but I think it is very much to the point to request them to add to their activities and interest the public in the official medicines as well as in the patent medicines and proprietary specialties. I very strongly support that idea.

DR. ALEXANDER S. VON MANSFELDE, Ashland, Neb.: We have a law that is very strong in intention in my state of Nebraska. We have a drug expert and food inspector, but out of the means at his command it is impossible to give sufficient money for such service. I want Mr. Wilbert to go on another tangent next year and describe some sort of a method by which we can have the examination of the drugs on the shelves of druggists done in a rather quick way, even if it is a little bit superficial, so that we can go to an average pharmacist and quickly examine the things in the drug store and throw out those that are abominable. Then we shall have made a good beginning for carrying out the law.

A CASE OF COCCIDIOIDAL GRANULOMA (CALIFORNIA DISEASE)

G. R. CARSON, M.D.
AND
W. T. CUMMINS, M.D.
SAN FRANCISCO

History.—H. D. V., aged 24, American, clerk, Coalinga, San Joaquin Valley, California, was admitted to Southern Pacific Hospital Feb. 17, 1913. Family history was negative. Patient had had measles and typhoid (?) when a child. Denied venereal infection. He was in hospital from Aug. 16 to 20, 1912, for laryngitis, which was suspected of being tuberculous. The present illness apparently began two months before admission with "a cold," the laryngeal condition having subsided shortly after the previous discharge. Four days before readmission trifacial neuralgia together with severe frontal and occipital headache developed. Patient lost 20 pounds in weight in two weeks. No cough; no thoracic pains.

Examination.—Poorly nourished young man. Pulse rapid and weak; respirations normal; temperature 97.6 F. (a. m.). Pupils react well to light but poorly to accommodation. Tongue coated. Lungs and heart negative. Very slight abdominal tenderness. Spleen negative. No rose-spots. No tremors. Urinalysis: clear, amber, specific gravity 1.020; acid, no sugar nor albumin; no casts (on admission). Widal positive 1:40 and blood-culture negative.

Temperature and pulse were of typhoid character. Chief symptoms were severe, general headache and diarrhea. During the last week there developed an unproductive cough, mild nocturnal delirium and sweats.

Clinical diagnosis of typhoid was made. Death occurred March 2, 1913.

Post-Mortem Record.—Moderately emaciated body. No eruption, scars, bruises or bed-sores. Peritoneum smooth, glistening, pale and rather dry. Position of abdominal organs normal. Spleen moderately enlarged, but of normal shape; color slaty gray; consistency firm. Cut surface showed dark-brown pulp and many yellowish-white, firm and somewhat cheese-like areas from 3 to 5 mm. in diameter. Trabeculae indistinct. Liver of normal size and shape. Color of capsular and cut surfaces brownish-red. Consistency flabby. Numerous very small (1 mm.), yellowish-white, firm areas noted on capsular and cut surfaces. Gall-bladder apparently normal. Numerous petechial hemorrhages in gastric mucosa. Moderate congestion of ileum. No apparent involvement of Peyer's patches or solitary follicles. Appendix and pancreas apparently normal. Left kidney of normal size and shape; brownish-red and flabby. Moderate increase in cortical thickness. Yellowish-white, firm area of 1 mm. in medulla. Ureter apparently normal. Adrenal not examined. Right kidney identical with left. Adrenal showed yellowish-white, firm area of 1 mm. Bladder, prostate, testicles and epididymides not examined.

Left pleural sac apparently normal. Lung, 1,255 gm. Moderate congestion, especially at base. Both lobes closely infiltrated with small, grayish-white, firm areas from 1 to 3 mm. in diameter. No evidence of pneumonia, or cavities. Right pleural sac showed old adhesions throughout. Right lung, 1,250 gm.; identical with left. Pericardial sac contained some excess of clear, yellow fluid. Serous surfaces apparently normal. Heart and aorta not opened. Mesenteric group apparently normal, except for one lymph-node, which was moderately enlarged, caseous and calcified. Brain and spinal cord not examined. (Permission for partial necropsy only was obtained.)

Histologic Examination.—Spleen: Except in a few places the follicular arrangement of the tissues was lost. General lymphoid hyperplasia present. There were many large, fairly well-circumscribed areas of lymphoid and polynuclear cells together with round, yeast-like bodies, many of which were endosporulating. In places marked congestion. There were a few necrotic areas. Trabeculae were indistinct.

Liver: Moderate, cloudy swelling present. Numerous small lymphocytic and polynuclear cell-collections noted, chiefly in the lobular tissues. Some of these contained the above-mentioned bodies. There was an area with a giant-cell which closely resembled a miliary tubercle.

Pancreas: Moderate congestion and a few areas of necrosis. There were a few small-cellular masses similar to liver.

Kidneys: Cortical epithelium showed degeneration and desquamative changes—some cloudy swelling but chiefly fatty degeneration. There were several large and small cellular collections with and without yeast-like bodies similar to spleen and liver. There was an area with a giant-cell which closely resembled a miliary tubercle.

Adrenal: A few of the larger medullary arteries contained thrombi. A few small, cortical, cellular collections with bodies.

Mesenteric Lymph-Node: Capsule fibrotic and hyalinized. Lymphoid tissues almost completely necrotic and in places calcified. There were no giant-cells or other cellular evidences of tuberculosis.

Lungs: Moderate fibrosis of pleura. Moderate emphysema. Many large areas contained cells and bodies similar to spleen.

Pathologic Diagnosis.—Coccidioidal granuloma with lesions in the spleen, liver, pancreas, kidneys, adrenal and lungs; congestion of the spleen; cloudy swelling of the liver; congestion and post-mortem necrosis of pancreas; chronic parenchymatous nephritis; chronic pleuritis and pulmonary emphysema; tuberculosis (?) of mesenteric lymph-node.

REMARKS

The patient had lived in the San Joaquin Valley and had presented no skin-lesions to account for his infection. Although tuberculin reactions were negative, he was strongly suspected of being tuberculous when he was first admitted to the hospital in August, 1912. Marked hoarseness was present. Wassermann reaction was negative. On readmission in February he was apparently suffering with typhoid. In the light of the pathologic findings it seems not improbable that the positive Widal reaction was the consequence of a typhoid infection in early life. Although there was no splenic enlargement and blood-cultures were negative, the clinical picture was one of typhoid. At necropsy the lesions appeared to be those of miliary tuberculosis, the largest lesions being present in the spleen, if we accept the tuberculous character of the mesenteric node. For their size, however, the splenic lesions appeared rather firm for tuberculosis. Microscopically, there was no difficulty in demonstrating the *Oidium coccidioides* (Ophüls) in the various organs. These were most numerous in the spleen. It was unfortunate that a complete necropsy was not performed, especially to determine, if possible, the character of the early laryngeal lesion.

Southern Pacific Hospital.

LUMINAL, ITS TOXIC EFFECTS

WITH THE REPORT OF TWO CASES

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There has recently been introduced into this country a new sedative and hypnotic called "Luminal," which is chemically phenyl-ethyl-barbutyric acid. The need for new hypnotics is readily recognized, and the eagerness with which they are taken up in practice needs no comment especially to the neurologist and the psychiatrist. The features about this new hypnotic are that the sodium salt is readily soluble in cold water and that 0.3 gm. has approximately the same action as 0.5 gm. of veronal.

This brief communication is for the report of two cases in which Luminal was given as a sedative to produce sleep, and which produced in both, distinct toxic and untoward symptoms, lasting from twelve to thirty-six hours.

Case 1.—A young woman, aged 24 years, single, has suffered from hysteria for at least five years, at times suggesting a psychosis. She is always wide awake; never retires until 2 or 3 a. m.; she will lie awake for an hour or more and finally fall asleep for several hours. This has occurred over and over again for several years. On April 1, the patient was given 0.3 gm. of Luminal, not to be repeated for forty-eight hours. The dose was taken at 9:30 p. m.; sleep was not produced and the usual run of events followed that evening. The next night, not having slept sufficiently the night before, she again took 0.3 gm. Within an hour she was asleep and slept very soundly until awakened by a member of the household at 10 a. m. At this time she presented evidences of drug toxemia. She was dreamy and sleepy; head felt very "light." Her speech was slurring and scanning; her words were mispronounced and there was paraphasia. On attempting to walk she swayed; there was considerable ataxia and inability to stand without support. She continued in this condition for twelve hours, when the symptoms subsided and left her in her normal state. During the active stage, her pupils were dilated and her knee-jerks very much diminished. There was no disturbance in sensation.

Case 2.—Man, aged 35, single, has been suffering from insomnia, a symptom of a pronounced psychasthenic reaction. Manifestations of his condition have been present for about fifteen years, but within the last year his insomnia has grown more troublesome and he rarely obtains any more than three hours sleep a night. Various hypnotics, sedatives, placebos, hypnotic suggestion and psychotherapy have been employed without material result.

Having had several "bad nights" following a period of strain and stress in business, he pleaded for sleep. He was given 0.6 gm. of Luminal at 10 p. m. and told to repeat in one hour with 0.3 gm. At 2 a. m. he was still wide awake. At that time he asked if he could take more, but in its stead, 0.2 gm. of veronal was given him. He went to sleep about 4 a. m. but had to be awakened at 10 o'clock. At that time he was very sleepy; his speech was unrecognizable, he mispronounced words, stumbled in his speech and evinced paraphasia. On walking, there was marked ataxia, with a tendency to drop-foot; he was unsteady in his gait; had a tendency to fall; there were accompanying gastro-intestinal symptoms. His knee-jerks were absent. His pupils were dilated. There were no sensory disturbances.

This condition continued with very long periods of sleep for forty-eight hours, when he gradually returned to normal.

It would seem that the use of this new drug as a hypnotic, even in pronounced cases of insomnia, is going to lead to some difficulty, if repeated doses of the drug are given. In both cases it is seen that the action of the drug did not make itself manifest until an accumulative reaction had set in which then produced the untoward symptoms indicating drug toxemia.

[Comment: The description of Luminal and Luminal-Sodium appears in The Journal, May 17, 1913, p. 1541. It will be noted that the manufacturers state that the maximum dose, which should not be exceeded, is 0.8 gm. or 12 grains. In the first case the amount taken was only 6 gm. altogether. In the second case the maximum dose was exceeded. These cases illustrate the need of caution in the use of new remedies.—Ed.]

260 Benefit Street.

THE TREATMENT OF ANGINAL PAINS*

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ST. PAUL, MINN.

Pain of cardiac origin varies greatly in the mode, intensity and even the areas of its symptomatic expression, but permits no hard and fast divisions. Pseudo-angina is by its very name an absurdity unless we assume pure hysteria or simulation; nor can we longer seek shelter under the "reflex angina" of Huchard or the angina vasomotoria of Nothnagel. The severest attacks of cardiac pain may occur in the absence of coronary sclerosis and with a falling arterial tension, and on the other hand we may, and often do, encounter cases of extreme sclerosis in persons who have never experienced severe angina. Indeed, it may truly be said that major angina pectoris is one of the rarer expressions of coronary sclerosis as this is ordinarily observed at necropsy.

Cardiac pain of the most severe type may be encountered in many conditions, and its minor forms differ only in intensity and in syndromic completeness from those of the major type, and are often indeed true miniatures of the so-called angina pectoris vera. That in all instances the coronary circulation plays some part is undoubtedly true, for we know that even in simple dilatation the coronary flow is impeded.

As regards the misleading modes of expression and areas of distribution of cardiac pain, we may seek an explanation in the work of Head, Sherrington and MacKenzie.

In 1896 Henry Head published a series of observations dealing with referred pain of cardiac origin. He showed the remarkable cutaneous distribution of such pain in various lesions and the associated hyperesthesia accompanying it and often persisting for longer or shorter periods. His work, though not yet generally recognized by the busy practitioner, throws a new light on certain pains of the thorax, back, upper chest, head and upper abdomen, and has taught us to study the subjective side of the symptomatology of cardiac disease, to avoid faulty and damaging diagnoses, and greatly improve the patient's chances of longevity. The pain of rheumatism, intercostal neuralgia, headache, gall-stones and gastric ulcer are so closely simulated by that of cardiac origin as to have frequently deceived the very elect of our surgeons, and the medical treatment of cardiac lesions has in the past been deplorably hesitant and dilatory.

Following Head's teaching, MacKenzie, writing in 1908, laid special and proper stress on the subjective manifestations of cardiac disease and stated fully his theory of reflex protective pain phenomena. MacKenzie furthermore reported on a group of cases rich in cardiac symptoms and representing a condition to which he could give no better name than that of the "X disease" which, one finds, corresponds to the condition described fully by Stiller in 1907 under the title of *die asthenische Krankheit* or "asthenia universalis congenita." MacKenzie describes these individuals as "masquerading as cases of heart disease" though crediting them with an occasional slight dilatation and the possession of mitral and tricuspid murmurs often evanescent.

Several years ago I became convinced that these individuals were not masqueraders, but rather actual carriers of hearts which in weakness of musculature, ready dilatability and imperfect resistance to and recovery from heart fatigue and overstrain rendered them a most interesting group for study. Indeed, it was soon apparent that the recognition and proper interpretation of this condition removed any necessity for retaining such terms as "pseudo," "reflex" or "vasomotor" angina, for these cases of cardiovascular instability, readily induced insufficiency, and exaggerated nervous response, proved genuine examples of the readiness with which, in the presence of a weakened heart, referred cardiac pain or other reflex protective phenomena might be evoked and also exemplified its every grade.

As I have pointed out in earlier papers, the factor which has apparently acted to obscure the part played by the weak dilated heart in the production of head, chest and upper abdominal symptoms in these slenderly muscled, loose-belted, soft-bellied, ptotic individuals is the remarkably small, low-lying heart which for them represents a normal. Such persons often show, even in the stages of actual impairment of compensation and in the presence of a struggling heart, a percussion area no larger than that which represents the normal of the non-asthenic individual. Rest, digitalis and other appropriate remedies, careful percussion comparisons, and especially the use of the Roentgen ray will promptly disclose the actual condition by revealing the amount of shrinkage which follows such measures. But the change in the percussion outline is no less striking than the prompt relief of the hitherto existent pain and discomfort, usually precordial but often in areas remote from the heart itself. Murmurs are often present, sometimes persistent, but often as transient phenomena, and these are usually of the systolic pulmonary and mitral type, though direct bruits in the aortic area are far from uncommon.

These asthenic patients do not often die of actual heart-failure or disease, nor are they prone to develop degenerative changes in the heart or blood-vessels, but they certainly furnish typical examples of the anginas of the milder type associated with the lesser degrees of insufficiency.

As the result of my study of these cases, I firmly believe that the chief factor in the production of all cardiac pain unassociated with active pericarditis or aneurysmal pressure, whether it be intense or mild, transitory or persistent, is to be found in the strain imposed on a weakened and laboring heart often combined with a certain degree of individual hypersensibility and heightened reflex reaction.

We cannot effectively meet the problems of cardiac therapy until we abandon the prevalent disregard of early insufficiency, and substitute intelligent and judicious oversight and appropriate and timely intervention for prevalent timorous neglect.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Conservation of cardiac reserve means relative freedom from suffering and a longer life for the victim of cardiac disease, and our present methods as relating to early diagnosis and timely treatment are discreditable to our profession.

Having so extended the field of my essay, it would be impossible for me to enter into the details of treatment. Indeed, it would be presumption on my part to undertake a critical discussion of drugs before a body so much better fitted than I to deal with this side of the question.

The actual treatment of pain of cardiac origin is greatly simplified if we consider it as representing in all its phases impaired tonicity and contractility induced by cardiac fatigue. The cardiac reserve is, of course, the determining factor with relation to the onset of pain, and this reserve may be markedly diminished, through the gradual encroachments of degenerative processes on the myocardium with or without valvular disease, through sustained high arterial tension and the various toxemias acute and chronic, through constitutional weakness and insufficiency of the heart muscle, or suddenly by excessive and imperative demands which the heart cannot sustain.

We should remember, I think, that even the most intense types of heart-pain are in no wise different from the pain of gall-stones, renal colic, or even that experienced in the muscles of the legs when these are exercised excessively and over long periods.

We must not, therefore, assume that pain of the sudden spasmodic type means necessarily a condition of arterial spasm, though we may very properly assume that this is present in some instances.

As to blood-pressure, one cannot differentiate by means of the general syndrome between attacks of angina pectoris with increasing arterial tension and those in which the tension is actually falling at the time of the attack. An extreme rise in tension is certainly more often present in cases of interstitial nephritis with sclerosis and antecedent high blood-pressure.

It is unnecessary to detail the various therapeutic measures indicated in the treatment of cardiac pain, but two factors are basic, namely:

1. The relief of the patient's anxiety and mental perturbation.
2. Rest for the heart; indeed, the latter not only demands physical rest but also includes the first therapeutic need—mental rest as well.

For my own part I consider the use of morphin with atropin the primary and cardinal necessity in the treatment of the severer anginal pains.

While we cannot affirm any direct cardiac stimulation from the former drug, we certainly obtain that effect indirectly by the relief of pain and the sense of well-being which it induces in the patient.

Strychnin I have found of the greatest value in cases showing low or moderate tension, and I have not hesitated to use it in any instance in which the prostration was extreme despite the apparent theoretical objection.

With regard to the use of the nitrites, I confess that I cannot see of what value they can be in severe prolonged seizures or in any but the briefest attacks. Momentary relief is certainly afforded by amyl nitrite in some but not in all cases, although it has been shown that the vascular relaxation induced does not affect the coronary arteries, which become in fact somewhat contracted. It would appear that it at once momentarily stimulates the heart and frees the peripheral circulation

Nitroglycerin and erythrol tetranitrate are apparently valuable in some cases of high arterial tension as a means of retarding the seizures, though I have not been able to satisfy myself clinically that they possess the advantages so generally attributed to them, the former being much too transitory in its action.

Hot alcoholic drinks, especially brandy in the form of a hot drink, is, I believe, always permissible and usually gives decided relief.

The various preparations of digitalis may be used following the attack in all cases in which there is evidence of dilatation, though I believe that these should be most carefully handled in the instances in which decided arteriosclerosis is evident, or when a degenerative heart-muscle fails to yield a prompt response and we have reason to believe that the coronary arteries are markedly impaired or that the myocardium has passed beyond its ability to respond to direct stimulation. Driving such a heart-muscle is not only futile but also often fatal.

In cases of simple dilatation, in painful crises of exophthalmic goiter and in weak hearts of the asthenic type digitalis is the drug of choice.

Digipuratum is invaluable in dealing with the ordinary weak heart with dilatation, but if the observations of Cow of Cambridge are correct, would be a dangerous remedy in cases in which there was marked coronary involvement, because of its tendency to produce excessive contraction of these vessels.

The treatment of the lesser cardiac pains resolves itself invariably into a treatment of cardiac insufficiency and need not be especially considered with respect to the use of drugs. It is of importance, however, in relation to the prevention of major seizures.

The element of rest is of immense importance in all of these cases, and demands much judgment and circumspection with relation to the degree of limitation of physical activity and the length of time during which it shall be enforced.

Cases of most alarming cardiac pain, easily induced and of frequent occurrence, may entirely disappear over long periods, provided rest for the body and mind is strictly enforced for a sufficient time but followed by a systematic training of the heart to take up extra burdens.

In cases of minor dilatations, a few days of absolute rest combined with cardiac stimulation will often suffice to remove entirely and for long periods pains of a most misleading sort often far removed from the heart, and these may also do away with symptoms of gastric distress which may perhaps have been interpreted as due to a gastric neurosis or even more serious organic lesions.

The diet is one of the most important factors, and it has seemed to me that many of the instructions relating to it in connection with the severer types of cardiac attacks are mistaken ones. I believe neither in starvation nor in liquid diet for these individuals, but have invariably found that light, dry feedings six times a day are best borne by these susceptible patients, to whom any condition of flatulence often means a prompt resumption of cardiac pain.

In the asthenic cases, in which the pain or discomfort is usually of mild grade, one of the chief needs of the individual is frequent nutritious feedings, for one of the primary essentials if proper compensation is to be maintained consists in improving the nutrition and markedly increasing the weight of the individual.

It is unnecessary to state that massage is valuable in nearly all types, as are passive and resistive movements when they can be absolutely controlled by the attending physician and not left to the independent judgment of an overzealous masseur.

A resort to the various establishments in which hydrotherapy and massage constitute the chief factors of treatment should be permitted only when the attending physician can direct and limit the procedures used.

As a matter of practical experience I know of no one element which has proved so disastrous to patients with advanced cardiovascular disease and to patients of the asthenic group as have been the visits made to establishments of the type so prevalent in our own country where a certain routine treatment is too often instituted without a proper appreciation of the factors involved and usually without consultation with, or reference to, the attending physician.

SUMMARY

1. While recognizing its wide variability, we should assume the unity of pain of cardiac origin and found our therapy on the one chief causative factor—cardiac exhaustion.
2. The wide distribution of cardiac pain in the superficial sensory areas has led to misinterpretation of the lesser degrees of pain of the same origin and hence, too much neglect and diagnostic error.
3. The efficient treatment of cardiac pain in the broader sense resolves itself into the management of an insufficient, overfatigued heart muscle.
4. Mental and physical rest and regulated exercise offer the best means of restoring a proper circulatory balance.
5. A proper valuation of the subjective symptoms of cardiac overstrain, early oversight and the timely and judicious treatment of cardiac lesions is quite as important as is the early recognition and treatment of tuberculosis.

324 Summit Avenue.

ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: I cannot altogether agree with Dr. Greene in his classification of cardiac pain, especially in regard to the minor pains of the heart, which occur especially in that condition described by Spiller as asthenia congenita universalis. While people of this class may present conditions of the heart-muscle which give pain when overfunctionating or functionating no more than normal, they will also present pain elsewhere. It is not alone for heart-pain that we treat them, but for discomfort due to a hypersensitiveness of the whole cerebrospinal axis; and, while some of them may present evidences of dilated heart or heart that does not do its full work and may suffer from pain referred to the heart, I would not classify their condition with the more important condition that we call angina pectoris vera. As to the cause of pain in true angina pectoris we are in doubt. The late John Musser stated fully fifteen years ago that he had seen patients who suffered from angina pectoris cease to have pain after secondary heart dilatation developed. With lessened intracardiac tension pain ceased. This would indicate muscle-spasm as a cause. I have seen heart pain due to ischemia of the heart-muscle just as we get intermittent claudication from stoppage of blood in the calf-muscles when the patient is moving. That complete loss of blood in the muscles of the heart does not cause spasm seems probable. I have seen patients who suffered from complete thrombosis or occlusion of the coronary artery, which deprived the ventricle-muscles entirely of blood, die within twenty-four or forty-eight hours afterward without heart pain. The fact that patients with angina pectoris vera have, as a rule, degeneration of the heart-muscle, sclerosis around the openings of the coronary arteries or other morbid changes would imply that the circulation of the muscle of the heart is diminished. It is fatigued, it is true, because it has less blood. One who has watched these cases must separate them from the latter group.

As to the treatment for the prevention of attacks, I agree with Dr. Greene that the proper diet, light in character, must be given, but there must be absolute control of the patient also. The emotional element often found in these cases is as much a symptom as the pain itself and sometimes causes an increased arterial tension preceding the attack. Atropin may be used for treatment during an attack, but morphin to calm the patient and relieve him of pain, in conjunction with the nitrites, is the chief remedy. The nitrites given to patients before physical exertion will prevent the attack. Their use for the relief of existing pain is not of much worth.

DR. A. D. HIRSCHFELDER, Baltimore: I wish to emphasize the importance of recognizing that class of patients with precordial pain, often quite severe, and perhaps paroxysmal. Regarding the distribution of these pains we feel them according to the site of the heart in the fetus, not at the site at which the heart and the portions of the heart lie in the adult body. In other words, if we wish to study the symptomatology of angina pectoris or cardiac pains, we should not study the adult, but the embryo. The same applies to the confusion which Dr. Greene referred to between the gastric-ulcer pains and the gall-bladder pains and angina pectoris and I should like to add the pains from swallowing air. All these structures in the embryo are closely associated at near-lying levels and the pains are referred along the same nerve-structures. In angina pectoris we have a hyperalgesia subsequent to the attacks of the same nerves so that a very mild air swallowing, which in the normal individual would not give rise to great distress, in a patient who has just had angina pectoris may give rise to absolute writhing in pain. If one makes a careful examination of a patient who complains simply of precordial pains without any marked symptoms one may find very definite signs of either an outspoken or a mild Basedow. It is most important that the heart-muscle should be adequately nourished for the nutrition of the heart-walls seems to bear a definite relation in certain patients to the level of blood-pressure. I have had occasion in one patient to note that there was a very definite relation both upward and downward to changes of the blood-pressure. This woman subsequently died apparently of coronary sclerosis. I should like to emphasize the importance of rest and of slow movements. For example, a man who consulted me about two years ago was having pains which seemed to follow all the characteristics of a definite coronary angina, on the slightest exertion (with the angina he had general arteriosclerosis—he was 72 years of age). The question was whether this man should retire entirely from business and lead the life of an invalid, or whether he could under any circumstances, go on with it. I suggested to him that he take care to rise slowly from his chair, to stop on the stairs long enough to make one deep inspiration at least between going from one step to another and to exercise other simple precautions. Without any other measure whatever, he has recovered and for the past two years he has not had a single pain or a single bit of precordial discomfort.

DR. PHILIP S. ROY: In patients suffering from true angina the attacks will sometimes disappear. One condition which will cause the disappearance of the anginal pains due to exhaustion of contractility of the heart-muscle is mitral regurgitation. This valvular condition for a time relieves the heart of its strain. I believe that when we are asked for prognostic advice in angina, a series of radial tracings will be our greatest aid.

DR. W. H. WITT, Nashville, Tenn.: It is true that we cannot expect anything more than the most temporary action of amyl nitrite, but its effect is quite comparable to that of morphin in severe gall-stone colic. We cannot say why, but in the great majority of cases of gall-stone colic the patients get complete and continued relief until sometime later they have another attack. I think the same thing is quite true in a fair proportion of cases of angina pectoris, and in two cases particularly I have been able to add greatly to the comfort of the patients by having them keep pearls of amyl nitrite and break them when they feel an attack coming on. I grant you the effect is transient, but the result may last long enough to prevent such cardiac failure or strain as might cause death. Morphin does give great relief, but you see some cases in which morphin has no effect at all as you see cases in which amyl nitrite has no effect. I have learned, in cases in which morphin will not relieve to give a very unfavorable prognosis, that the patient will possibly not improve much. Younger people, who are more or less neurasthenic, who have a mild degree of pain, are quite a different class from those with anginoid or typical anginal pain. From the practical point of view it is not wise to make any distinction between typical attacks of angina and the milder attacks in persons 55 or 60 years of age. Essentially the attacks are the same and the patient is in danger. I was particularly interested in Dr. Hirschfelder's advice for slow movement and I think that it saves patients.

DR. B. FANTUS, Chicago: I should like to say a few words in favor of bromid in the prophylaxis of anginoid pains. According to the helpful classification of Dr. Greene anginal pains are due to changes in the heart-muscle and to excessive nervous irritability. It seems that, where the latter condition predominates, bromid might be of value. I know of a number of patients who have again and again taken bromid because they thought it made their attacks less frequent.

DR. LOUIS FRANCISCO ROSS, Richmond, Ind.: I wish to say a word about slow movements. I happened to have two or three of these patients who could not remember to move slowly, especially to go up stairs slowly, which is most important. I therefore told them to go up stairs as children do, taking the up step with the same foot. After they established this habit they necessarily went up slowly and got on much better.

DR. RAY L. WILBUR, San Francisco: I should like to ask
Dr. Greene to speak on these pains from the point of view of
"hollow-organ pains." We have in the bowel similar spasmodic
conditions. These pains occur also, apparently, in the wall
of the ventricle. I wonder whether the use of strychnin is of
any service. Perhaps the combination of morphin and strych-
nin is better, since we find the bromids of benefit in limiting
the susceptibility to the pain. I should be inclined not to
use the strychnin under such circumstances.

DR. CHARLES LYMAN GREENE, St. Paul: The point that I
wish to bring out primarily is the fact that we are not at the
present time paying sufficient attention to cardiac disease in
its earlier stages. We are taught and we have taught others
in the past to treat only cases of frank, gross, obtrusive
insufficiency. This is no more right in the case of heart disease
than in the case of tuberculosis. My asthenic cases have given
me an excellent opportunity to study certain minor insuffi-
ciencies which in this type of individual seldom become any-
thing serious, and it has been most interesting to see the
fragmentary picture and then perhaps a replica in miniature
of the anginal attack. These cases cannot represent anything
else than hollow-organ pain. Asthenic patients have a hidden
nervous irritability; they all show increased knee-jerks and
intense psychic response and it is very easy for a slight
dilatation in them to cause most curious and occasionally
quite severe manifestations of cardiac distress. I have been
interested in seeing patients with abdominal localization nar-
rowly escape operation for gall-stones. A patient whom I saw
not long ago entirely relieved by a week's treatment of the
heart showed an unusual localization of her maximum distress
over the lower abdomen. Then pain in the shoulder and back,
and curious headaches are often encountered. I believe that
we must and ought to consider these various pains as coming
from the same cause throughout, representing in every instance
identically the same thing, a hollow muscular organ unable to
do its work and protesting in its own way. These cases are
in fact almost constantly being mistaken and treated as cases
of so-called nervous exhaustion and, fortunately, because of
this fact these patients are properly nourished and put at
rest, which is just what the asthenic heart needs. As
regards the institutional care of anginal cases a trip abroad
for a patient with genuine angina pectoris is a good thing if they go to the good institutions where they have skilled physicians and where the regimen is properly carried out. I agree with my colleague's estimate of bromids in these cases and I did not speak of the iodids because I do not believe that anyone knows enough about them to talk about their effect in these cases, though we must recognize the fact that a large proportion of our arteriosclerosis cases involving the aorta and the coronaries are luetic and the value of iodids in certain of these cases is unquestionable. I wish again to express my wonder that there should be such morbid fear of giving digitalis. We all know now that the digitalis does not affect the normal heart nor does it affect the heart which is compensating even though diseased. Then why should we be afraid to give the doses required to test its efficiency and establish the presence or absence of a dilatation often unrecognizable by other means?

POTASSIUM PERMANGANATE AS A LOCAL ANESTHETIC TO THE GENITO-URINARY MUCOUS MEMBRANES

A PRELIMINARY COMMUNICATION

WILFRED M. BARTON, M.D.
Associate Professor of Medicine in the Medical Department of Georgetown University
WASHINGTON, D. C.

In a search through the literature and on inquiry among my colleagues, some of them genito-urinary specialists, I have not been able to find any reference to or knowledge of the anesthetic action of potassium permanganate. Inasmuch as my own experience and investigation have shown that the drug possesses local anesthetic powers of no inconsiderable degree on the mucous membrane of the genito-urinary tract, I report the fact, together with a brief account of the circumstances which led to its discovery and a limited amount of experimental data in support of it.

Some time ago I found, accidentally, in the following case, that the injection of potassium permanganate into the urethra and bladder caused a transitory but complete desensitization of the mucous membrane of the urethra, anterior and posterior, of such a degree and character as to allow of the painless passage of sounds.

Patient.—White man, had had fifteen years previously, a
gonococcus infection, anterior and posterior, which lasted over
six months. He complained of bradyuria which dated back to
the infection. On examination the patient was found to require
fifteen or twenty seconds to void 150 c.c. of urine, the last
portion being voided by ejaculatory efforts and manipulation
of the penis. The prostate was neither enlarged nor tender;
the urine was clear and free from shreds and entirely nega-
tive on chemical examination.

He seemed quite timid concerning the examination of the
urethra by sounds. Having noted on previous occasions, while
using potassium permanganate in irrigating subacute and
chronic gonorrheal urethritis, that the primary sensitiveness
following injection soon disappeared and was replaced by
apparent desensitization I determined to try the effects of irri-
gating the urethra with solution of permanganate of potassium
to see whether a real anesthesia of the mucous membrane could
be obtained.

Experiment 1.—5:00 p. m.: Finished irrigating the urethra
anteriorly and posteriorly with 1,000 c.c. of solution of potas-
sium permanganate (strength not noted). Irrigation was
made with blunt urethral tip not catheter.

5:02 p. m.: Sensation of slight warmth in urethra. A No.
24 F sound sterilized and well lubricated was passed painlessly.

5:05 p. m.: A No. 26 F sound was passed painlessly. Very
slight sensation of stretching experienced, not disagreeable.

5:15 p. m.: Introduction of sound into anterior urethra causes smarting.

Experiment 2.—Same patient on another occasion.

4:25 p. m.: Finished irrigating urethra and bladder with 1,000 c.c. of solution of potassium permanganate 1:2,500.

4:27 p. m.: The urethra, tested with lubricated sound 26 F, was found desensitized, and the instrument passed into the bladder without pain.

4:30 p. m.: No. 28 F sound passed without pain. Some sense of tightness felt as sound passed stricture of large caliber. Removal of instrument required slight traction but caused no pain *in situ*.

Experiment 3.—Normal urethra.

6:02 p. m.: Finished irrigation of urethra and bladder with 1,000 c.c. of 1:5,000 solution of potassium permanganate.

6:04 p. m.: Mucous membrane of meatus slightly less sensitive than normal to touch of sharp instrument (sterilized needle).

6:05 p. m.: Very slight sensation of warmth in urethra.

6:07 p. m.: Passage of No. 26 F sound effected with only very slight sensitiveness more especially in the deep urethra and this quite negligible. Slight discomfort felt after withdrawal.

6:10 p. m.: Meatus almost desensitized to touch of sharp instrument. Discomfort following withdrawal of No. 26 F sound gone.

6:14 p. m.: Passage of end of No. 28 F sound into anterior urethra produces burning and smarting and attempts at further penetration cause pain. Sensation of meatus to sharp instrument returned.

The anesthesia period obtained in the above experiment (No. 3) is therefore slightly less than ten minutes, coming on within two minutes after completion of irrigation with solution of potassium permanganate in dilution of 1:5,000. An attempt to reirrigate the anterior urethra in Experiment 3 with 1:5,000 solution at 6:20 p. m. produced smarting and burning and was discontinued. A period of redesensitization appeared which lasted five minutes.

The preceding experiment was repeated on divers occasions and the results found to be the same.

Experiment 4.—Normal urethra.

5:09 p. m.: Finished irrigating urethra and bladder with 1,000 c.c. of 1:10,000 solution of potassium permanganate.

5:11 p. m.: Meatus sensitive, though perhaps less than normally, to touch of sharp instrument.

5:14 p. m.: Passage of No. 28 F sound into urethra accompanied by some smarting, particularly when passing through posterior urethra.

DEDUCTIONS

It will thus be seen by Experiment 4 that anesthesia of the mucous membrane of the urethra so completely and satisfactorily produced by solutions of potassium permanganate in the strength of 1:2,500 or even in 1:5,000 is incomplete and unsatisfactory when the dilution is raised to 1:10,000.

The minimum limit of dilution to obtain satisfactory anesthesia therefore lies at 1:5,000. The maximum limit of concentration will of course be governed by the fact that solutions in excess of 1:2,000 in the posterior urethra should not be used.

It is perhaps superfluous to speculate on the explanation for the undoubted anesthetic power of potassium permanganate on the urethral mucous membrane. When a solution of this substance comes in contact with organic matter as albumin the permanganate parts immediately with a large portion of its oxygen becoming thus reduced. The oxygen attaches itself to the proteid producing a certain degree of chemical change, probably in the direction of oxidation. After the permanganate is reduced it loses its action.

Experiments which I have made on the skin show that it is entirely unable to produce any anesthesia here. This is probably due to the impossibility of penetration to the nerve terminations before reduction of the compound takes place.

The practical deductions from the facts above stated are limited though important. A method of producing a satisfactory anesthesia of the mucous membrane of the urethra and bladder devoid of any possibilities of toxic phenomena whatever and extremely simple in its application should be welcomed by those who are called on to perform painful instrumental manipulations on the genito-urinary canal and especially so by those who are called on through unfortunate circumstances to submit to them.

1730 Connecticut Avenue N. W.

NEW STYLE DRAIN-PAN FOR OPERATING-TABLE

W. M. Hayes, M.D., New Orleans

The old style drain-pan being oval or nearly circular, there has always been trouble in keeping it sufficiently near the operating-table. When placed against the lower supporting rods of the table, the pan would rotate from place to place along the side of the table, allowing the refuse which should drain from the Kelly pad into pan, to go on the floor, much to the annoyance of the operator and his assistants.

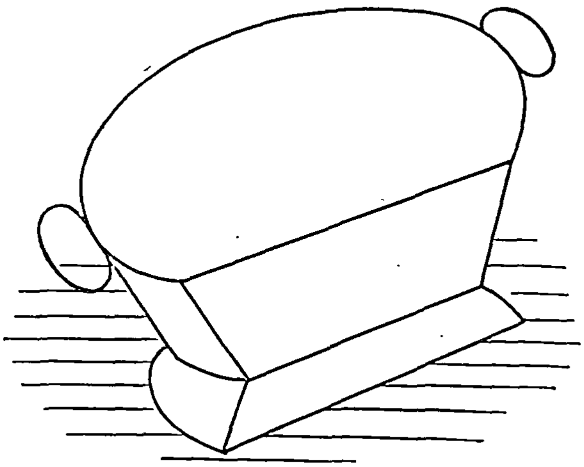


Fig. 1.—New drain-pan, showing flat back surface.

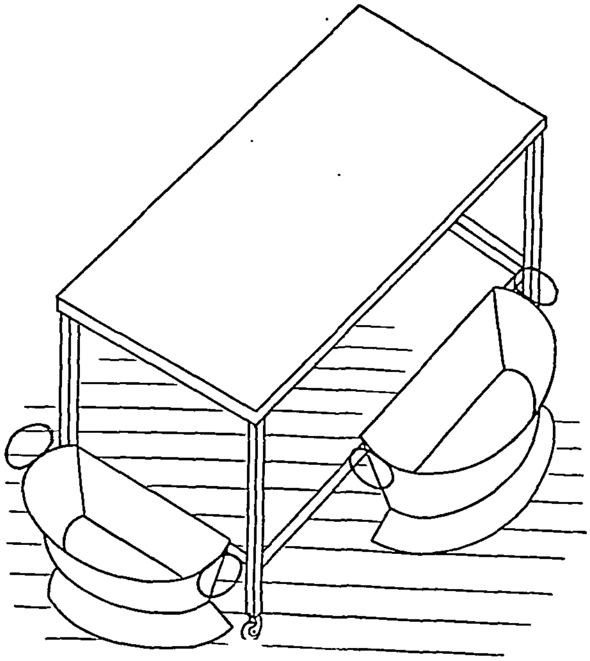


Fig. 2.—Pan placed squarely against lower rods of table.

This pan (Fig. 1) is two-thirds round or oval while one-third has a flat back surface which permits the pan to be placed squarely against the lower rods of the table (Fig. 2), thus preventing it from moving from its original place.

1525 Calliope Street.

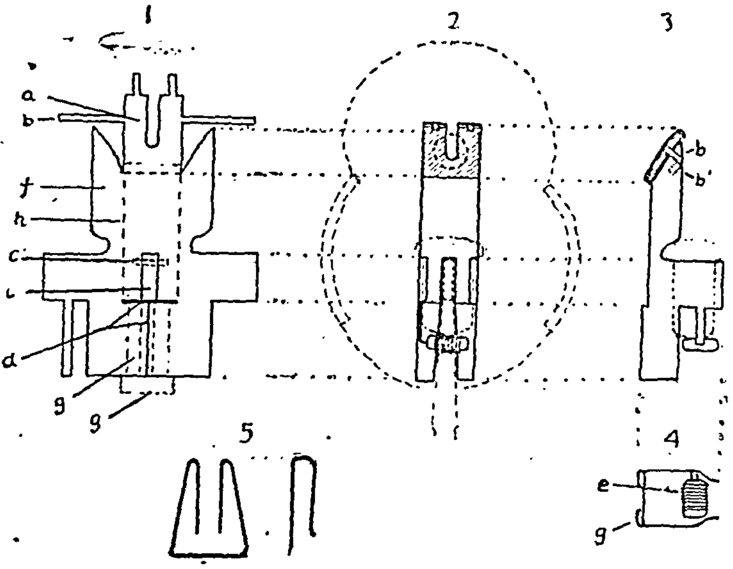
SIMPLE ELECTRIC ATTACHMENT FOR OPHTHALMOSCOPE

M. H. Todd, A.M., M.D., Baltimore

The electric ophthalmoscope is very much more convenient than the ordinary type—especially when the patient is in bed—but the cost is excessive in comparison with the convenience, from the point of view of the average physician. I have devised a very simple attachment for the usual form of instrument, which can easily be made for less than a dollar.

The necessary materials are a piece of sheet brass as thick as a postcard, and about 6 inches square to allow for errors; a small electric light of the sort used in the familiar hand flash-light, together with its battery; a small mirror, and 3 feet of double flexible electric-wire cord.

The tools required are the following: A pair of old shears; a small pair of pliers with quite narrow flat nose, and either a very thin small flat file or, much better, the use for half an hour of a dentist's engine, equipped with a narrow carborundum wheel.



Electric attachment for ophthalmoscope.

The diagrams give the plan in detail. The sheet of brass (Fig. 1) is cut along the solid lines and bent along the dotted lines, as shown in the other figures. The exact measurements and proportions vary with the individual ophthalmoscope and mirror used. The mirror-back is shown at *a*; *b* indicates the stay-pieces that hold *a* firmly against the free diagonal ends of the sides *f*, the mirror itself intervening; the ends of the strips *b* are either soldered to the sides *f*, leaving room to slip in the mirror, or simply bent tightly over the edges of the sides, as shown in dotted lines at *b'* (Fig. 3); *c* represents a slot that fits over the lower bearing of the original mirror of the ophthalmoscope (the position and character of this vary with the instrument); the original mirror, incidentally, will have to be removed; *d* shows a T cut that enables pieces at *g* to be bent as shown, from the rear, in Figure 4; at *e* (Fig. 4) is shown the insulated contact for the pole of the electric lamp; it is simply a piece of rubber, impaled on a little strip of brass as pictured in the several figures, and wound with bare copper wire; the position of the light and the ophthalmoscope itself are indicated by dotted lines in Figures 3 and 4. Finally, Figure 5 gives the shape of a spring clip made of steel or spring-brass wire, which engages by its free ends in grooves *g* and holds the attachment firmly to the instrument.

The little mirror should be about three-eighths inch square, and has a slot one-sixteenth inch wide extending to its center; it is fashioned from a five-cent hand mirror, or, perhaps better, from a watch-glass, silvered to make a concave mirror. Any good text-book of chemistry will give the solutions used. The back of the mirror should be coated with shellac, after shaping, to prevent the silver from loosening. The cutting is done with a file if necessary, but a much smoother and easier result is attained with a dentist's engine.

The two wires in the double cord are fastened, respectively, to the contact *e* and to some part of the body of the attachment itself. This may be done with solder, or by simply snipping up a little strip from the attachment with scissors and then firmly bending it round a loop in a piece of plain copper wire, the end of which is in turn wound round one of the flexible wires of the cord. The other end of the cord, of course, goes to the battery. Care should be taken that the circuit is complete only when the electric light is in position.

The bulb of the light itself is painted black except for a triangular area, equilateral, with apex at center of bulb and base near circumference. It is preferably silvered first, perhaps, to get the benefit of reflected light within the bulb.

The instrument as described gives a very satisfactory view of the fundus; and when painted dull black it is also neat in appearance, a point perhaps worth mentioning.

For the newer style of ophthalmoscope, the following changes are made: The slot *c* is modified by leaving the hinder end of the little flap attached, the flap then being bent up to form an additional point of support for the lamp. An additional slot *c'* is added to fit over the lower bearing of the original mirror (the mirror must be removed by gently prying up one end). The T-shaped cut *d* is omitted, and the main line of bending, *h*, is continued back to the end, thus omitting flaps *g*. A little extra flap *g'* is utilized to elevate slightly the hinder end of the attachment and bring it parallel with the ophthalmoscope by turning it under the hinder end as a point of support.

REPORT OF A CASE OF HEMATOSPERMIA DUE TO HIGH BLOOD-PRESSURE, ASSOCIATED WITH CHRONIC INTERSTITIAL NEPHRITIS

Ralph B. Scheier, M.D., San Francisco

History.—G. L., American merchant, aged 37, married, a non-user of tobacco or liquor, presented himself for treatment, April 16, 1910. The patient was "feeling in the best of health," but had noticed on several occasions that the penis was covered with blood after intercourse. At first this condition occurred at intervals of one week or more. The condition gradually grew worse and blood was observed after every act of coition. On several occasions, on awaking in the morning, he found his nightgown soiled with blood and semen. This was not accompanied by erotic dreams. The patient's father died at the age of 50, cause unknown. His mother died at 63 of heart-disease. His brother died of pulmonary tuberculosis. The patient had gonorrhea on two occasions, the last attack in 1905. He then weighed 216 pounds. He developed a slight but obstinate cough and lost 20 pounds in three months. He had night sweats and felt weak. On several occasions he suffered from hemoptysis. Tubercle bacilli were demonstrated in the sputum. The patient was advised to live in southern California. He was put on a hygienic regimen and after a period of one year made a complete recovery. His weight and strength were regained, the cough disappeared and no tubercle bacilli were found in the sputum. No lung symptoms have since appeared.

Physical Examination.—Patient was well nourished and well developed, height 6 feet 1 inch, weight 216 pounds. Color, pasty pale, mucous membranes normal in appearance, breath bad, teeth excellent, tonsils hyperemic and enlarged. Lymphatic system negative. Heart normal in size; faintly audible systolic murmur heard at mitral area. Apex-beat not visible. Arteries negative. Blood-pressure 210 mm. mercury. Lungs: slight dulness at right apex, with prolonged expiratory sound (general condition precludes active process). Liver dulness normal, spleen not palpable. Abdomen tympanitic. Sleep and appetite excellent. Nervous system negative. Urethra and bladder of normal appearance on endoscopic and cystoscopic examinations. Prostate gland found normal on palpation. Seminal vesicles not palpable.

Laboratory Findings.—Blood: hemoglobin 90; erythrocytes 4,800,000; leukocytes 10,000; differential count normal. Urine: 2,375 c.c. voided in twenty-four hours; color, pale amber; reaction neutral; specific gravity, 1.010; albumin, 0.2 per cent.; indican present. A few granular and waxy casts, and a few erythrocytes and kidney cells show in sediment. Prostatic fluid normal. Semen, reddish-brown fluid; unstained specimen shows many motile spermatozoa. No tubercle bacilli seen in three specimens; no gonococci. Semen gave definite blue color with Obermeyer's reagent and chloroform, showing presence of indican.

Differential Diagnosis.—Urinary findings with high blood-pressure made the diagnosis of chronic interstitial nephritis obvious. The blood seen after coition came from some part of the genito-urinary tract. Kidney, bladder and urethra were eliminated as no blood was observed in the urine and none appeared after micturition. This was further confirmed by endoscopic and cystoscopic examinations. The time of occurrence distinctly showed the lesion to exist in the seminal vesicles or ejaculatory ducts. Neoplasms, tuberculosis, gonococcic infection, concretions, acute vesiculitis, syphilis or essential hemorrhage might be responsible for the hematospermia. Neoplasms were eliminated, as no growth was palpable (no manifestations have since developed). Tubercle bacilli were not evident on microscopic examination and injection of semen into a guinea-pig proved negative; no nodules on palpation. Gonococcic infection was ruled out by negative microscopic examination. Concretions were not probable in the absence of colic, aspermia, sexual irritability or evidence on palpation. Acute vesiculitis was ruled out by absence of inflammatory manifestations. A negative Wassermann test excluded syphilis. The high blood-pressure of 210 mm. Hg, associated with the chronic interstitial nephritis, was then assumed to be the causative factor, as confirmed therapeutically.

Treatment and Result.—Diet was modified, and 150 gm. meat allowed daily, but no cabbage, beans, sprouts or any food tending to produce tympanites was permitted. A light evening meal was allowed. As the patient had been wearing very light athletic underwear (sleeveless and half pants), light wool, full length was substituted. Cold baths had previously been taken daily; these were absolutely interdicted and the patient was directed to take warm baths at bedtime several times weekly. Fluids were limited to 1,500 c.c. daily, and a moderate amount of exercise was ordered. Artificial effervescent Carlsbad salt, 2 drams in a cup of hot water, was ordered to be sipped slowly every morning fifteen minutes before breakfast. To reduce the blood-pressure sodium nitrite, in 2½-grain doses, was given three times daily.

The condition of the semen showed a marked improvement a few days after treatment was instituted; the bright red color of the blood gave way to a faint discoloration which gradually disappeared at the end of two weeks when no trace could be observed either macroscopically or microscopically. At this time, the administration of sodium nitrite was stopped as the blood-pressure was reduced to 160 mm. Hg. Carlsbad salt was continued with modified diet and hygienic directions. The urine was examined twice monthly. Each succeeding examination showed marked diminution in the number of casts. At the last few examinations no casts have been visible, and albumin has remained at 0.05 per cent. Indicanuria is absent. On two occasions in the past three years a slight trace of blood has been seen in the semen. Each time the blood-pressure registered over 200 mm. Hg and the condition yielded to agents directed to reduce the pressure.

CONCLUSIONS

Possibly many cases of so-called essential hematospermia could be traced to high blood-pressure or underlying pathologic conditions. The presence of indicanuria, tympanites and obnoxious breath in this case demonstrating intestinal fermentation, the subsequent correction of which was followed by improvement in the blood-pressure and urinary findings, serves to emphasize a probable connection between the intestinal toxemia and chronic nephritis.

126 Stockton Street.

INFANT DISEMBOWELED AT BIRTH—APPENDECTOMY SUCCESSFUL

EDWARD N. REED, M.D., CLIFTON, ARIZ.

I was called to attend Senora Y. A., a Mexican woman, in confinement, March 14. I found that the head of the infant was already free, and with the next pain, a moment later, the trunk was expelled. I was astonished at finding that the whole intestine, both small and large, was outside the abdominal cavity. Examination showed that the bowels had passed along inside the cord for about two inches, at which point the walls of the cord had ruptured, allowing the bowels to escape laterally.

No preparations for the confinement had been made; the bed was filthily dirty and the mass of intestines was thickly sprinkled with bits of straw, feathers, crumbs of food and fecal matter from the mother.

I had left the bedside of a woman just about to be delivered, in order to respond to this call. I hurriedly ligated the cord, delivered the placenta, and, wrapping the baby in the cleanest thing I could find, returned to the patient I had left.

Finishing this case I called my colleague, Dr. T. B. Smith, and we went together to see the disemboweled infant and took it at once to the Arizona Copper Company's Hospital. It was placed on the operating table two hours after birth. By this time the bowels were matted together with fibrinous adhesions which included many of the particles of debris mentioned above. They were cleansed gently with sponges and warm salt-solution, but this cleansing was not very thorough, of course. The appendix, three-fourths of an inch long, seemed to be contused and swollen and a catgut ligature was thrown around its base and it was then removed. The umbilical opening admitted the tips of two fingers. It was enlarged for half an inch upward and downward and the cord-bearing edges were trimmed off. The intestines were then replaced and a hurried closure was made with one layer of buried catgut and one of silkworm-gut.

The child made an uneventful recovery, save for one small stitch-abscess, and is at this date well and growing normally.

The Body as a Chemical Laboratory.—The body is a great chemical laboratory which is constantly dealing with a variety of chemical compounds, and the processes are of such a complex and unique nature as to baffle largely the most refined methods of organic chemistry employed for their detection. The proteins, the carbohydrates, fats, etc., have to undergo many changes in the course of their amalgamation with the tissues of the body. They are ultimately subjected to regressive processes, and are eliminated from the body in the form of relatively simple compounds, such as carbonic acid, urea and uric acid. This long physiologic metamorphosis, with its intermediate products, is at present only known to us in part, and still less can we speak definitely of many pathologic phases of metabolism, which lead to sundry forms of auto-intoxication. At any rate the chain of events may result in the production not only of useful and indifferent, but also of injurious and toxic bodies; while any check to the normal processes of elimination may lead to an accumulation in the system of normal waste products and a consequent intoxication. Carbon dioxid, urea and bile may respectively lead to asphyxia, uremia and cholemia; and in the diabetic coma we have a classical example of an auto-intoxication.—Allan Macfadyen, in *Clin. Jour.*

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SATURDAY, JULY 19, 1913

LIME IN THE DIETARY

The losses of inorganic elements of the body which are incurred in the metabolic processes need to be repaired quite as much as does the depletion of the stores of energy-yielding substances. Although it is well realized that the requirements of protein, fat and carbohydrate are varied by numerous and diverse considerations, particularly the size and muscular activity of the individual, and although it is appreciated that the protein needs in particular are somewhat unlike at different periods of the life cycle, as contrasted in the adult and the growing organism, yet in the case of the mineral nutrients the rational demands of the dietary are far more uncertain.

We venture to maintain that there is considerable neglect, in a practical way, of the bearing of the variable requirement of inorganic salts in human nutrition. Undoubtedly an immature and growing person demands a proportionately greater supply of lime, for example, in the ration than does a fully grown person. Experimental pathology has adequately demonstrated that it is possible to develop rachitic conditions of the bones in growing animals by a deficit in food calcium, though the possibility of accomplishing this successfully in the mature animal is not so conclusively demonstrated. In starvation there is a continual loss of lime with both urine and feces; and there are many conditions in human disease in which partial or complete inanition is an accompaniment. In pregnancy the developing fetus constitutes an immense drain on the lime-supply of the mother, so that an extensive impoverishment of the system in this manner may initiate intense pathologic symptoms.

These familiar facts lend emphasis to the contention that the lime requirements as well as those for other inorganic substances vary with the physiologic conditions and activities of individuals. The situation has been expressed in the case of animals by recent writers as follows:[1] A growing animal, a starving animal, a pregnant animal and a milk-producing animal each has its specific drains on the mineral nutrients. All of the conditions here involved are encountered as a part of the physiologic experience of humankind; and no consideration of diet and nutrition in health or disease will be complete until our present knowledge of the extent and modifications of these requirements is greatly extended.

Here is a field rich in promise of reward for the investigator. Some of the factors involved are already recognized. Thus in the case of lime, intestinal conditions determine to some extent — how much is not fully ascertained — the degree of absorption or elimination. With the recognition that calcium, magnesium, iron and phosphate are secreted into the bowel by the intestinal mucosa and lost to the body in this way quite as well as by the kidney, the problem has increased in complexity. The undue presence in the intestine of one ion or element which enters into insoluble combination with another may rob the organism of some needed constituent. Thus phosphate may withhold or withdraw calcium. These interrelations and interreactions among the inorganic food constituents are scarcely appreciated as yet. They make it clear why the same amount of an element like lime may have quite different nutritive import according to the accompanying situation in the intestine. What might ordinarily mean a positive lime balance, that is, an excess of income over outgo, may be converted into a negative one by the mere advent of a new element or other disturbing factor in the diet or the alimentary conditions.

Steenbock and Hart have emphasized some of these points very succinctly. A liberal assimilation of nitrogen does not necessarily imply an assimilation of lime even when the animal's supply of lime is considerably depleted. These are separate and distinct functions of the alimentary tract. A perverted lime metabolism which ultimately would end in an extreme impoverishment of the skeleton in lime may be merely the result of other physiologic disturbances.

One feature of this subject in particular deserves widespread attention. It is the influence of lactation on the lime requirement. The demands here made on the organism follow closely on those incident to the development of the fetus. As Steenbock and Hart point out, the mammary gland during its activity constitutes a severe drain on the skeletal lime-supply during periods of insufficient calcium assimilation. During periods of insufficient phosphorus assimilation it indirectly causes a waste of lime from the skeleton. Throughout lactation therefore there should be in the dietary a liberal supply of lime, far in excess of the maintenance requirement of the individual. Some of the most popular human foods, such as bread and meat, are so deficient in calcium that these needs deserve conspicuous statement. Too little attention is paid in practice to such specific requirements of nursing mothers. The limits of safety [illegible] still to be learned.

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[1] Steenbock, H., and Hart, E. B.: The Influence of Function on the Lime Requirements of Animals, Jour. Biol. Chem., 1913, xiv, 59.

COMPARATIVE MORTALITY OF MARRIED AND SINGLE PERSONS

An opinion has existed for many years that, on the average, married persons live longer than those who are single, and particularly that married men live longer than single men; but it has been rather difficult to secure data to establish this conclusion. The age classifications of censuses and of state departments of health have often been defective in the material necessary for definite conclusions, and besides, too few age classifications were made. The federal censuses of 1890 and 1900, for instance, were of little value for this study because the age classifications, 15 to 44, 45 to 64, and 65 and over, gave small opportunity for comparative mortality. Age and sex have so much influence on mortality that the effect of each of these must be eliminated before the possible effect of the marriage state on the death-rate can be determined. The comparison to be of value for statistical purposes and for conclusions as to health and life-expectancy must be between the death-rates of persons of the same sex and age, but of different marital conditions.

In 1909 the State Department of Health of New York began to tabulate the deaths in that state outside of the cities of New York and Buffalo in classifications by sex, age and marital condition which make it easy to draw conclusions as to the influence of these on the death-rate. When these figures were taken in connection with similar statistics for the population living on the same area in 1910 and similarly classified, as recently published by the federal Census Bureau, it became possible almost for the first time in this country to study mortality by marital condition. The New York State Department of Health then placed the problem in the hands of Walter F. Willcox[1] of Cornell University, who has worked out the statistics to their conclusions.

The most obvious fact indicated by the figures is that the death-rate for married men is much lower than that for single men at each age-group from 20 to 80 plus except the highest, and even there it is about the same. From 20 to 30 the death-rate among married men is 4.2, while among single men it is 6.6. From 30 to 40 the death-rate among the married men is slightly under 6, while among single men it is nearly 13. From 40 to 50 there is an even greater difference. The death-rate among married men is 9.5, whereas among single men it is 19.5. From 50 to 60 there is less divergence in the death-rates, but there is a difference in favor of the married of nearly 11 deaths per year per thousand. Even from 60 to 70 the death-rate of married men is less than 32, while that of the single men is 51.

Undoubtedly the lower death-rate among married men is partly due to the fact that as a rule those who are in good health are readier to marry, while those with more delicate health, especially if suffering from any definite ailment, are not willing to assume the burden and responsibility of a family. Another factor quite as surely is that married men live much more regular lives as a rule and consequently avoid many of the dangers of irregular living. Besides feeling their responsibility to others they do not take such risks of life or illness, and, as a rule, avoid venturesome expeditions and dangerous occupations. Jacques Bertillon, the French expert on occupational mortality, has found that low death-rates occur particularly in occupations in which the workman is under more or less supervision as regards not only health but also habits of life, and in which he is surrounded by influences tending to prevent dissipation, and conducive to regular hours and habits of life. Bank clerks and fiduciary employees who feel their responsibilities are types of this. Bertillon attributes much the same influence to marriage and family life. The married man is supervised for his own good, and having added incentives to self-restraint and to the care of his health, he has a lower mortality than the bachelor.

This view would seem to be corroborated by the statistics as to the mortality among married men who have lost their wives either by death or divorce. The death-rate among these "unmarried men" is considerably higher than that of husbands of the same age, and even as a rule it is higher than that of the bachelors of the same age. The death-rate, for instance, of widowers and divorced men between 20 and 30 is nearly double that of single men. From 30 to 40 it is only as 14.1 to 12.9, while from 40 to 50 the mortality of divorced and widowers is slightly less than that of single men of the same age. From 50 to 60, however, it is slightly higher once more. At all these ages the mortality-rate among widowers and the divorced is at least nearly and sometimes double that of married men of the same age. "If husbands lose their wives, then," concludes the expert of the New York State Department of Health, "they lose much of the chance of longevity which marriage secured them; and in general the younger they are the more they lose."

Among women the differences in the death-rates between married and single are not so striking. In one ten-year period, that from 20 to 30, married women have a higher death-rate than single women in the proportion of about 5 to 4. This is probably due to the influence of child-bearing at this period; but there is another factor in the statistics for this ten-year period that must not be forgotten. From 20 to 30 the married women have a much higher average age than the single women—that is, every year beyond 20 increases the liability to marriage, but also increases the normal death-rate. The single women are largely grouped from 20 to 25 at this time, and the married women from 25 to 30, particularly now that marriages are so frequently delayed. This compels us to discount not a little of what might otherwise seem to be a very unfavorable influence of maternity in increasing the death-rate among married women at this period. From 30 to 40 the death-rate among the married is lower than among the single and so on for every period up to 80. Marriage adds distinctly to a woman's expectancy of life, though not nearly so much as it adds to that of her husband. The state of health among women after the dissolution of marriage by death or divorce is not so unfavorably affected as among men. The mortality of widows and divorced women is higher, as a rule, than that of wives to a noteworthy degree, and higher also than that of spinsters, though the difference is not nearly so marked as among unmarried, married, widowed and divorced men. From the point of view of mortality, marriage is of much less benefit to women than to men, though for the sake of long life it is sufficient to be well worth considering.

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[1] Willcox, Walter F.: Month. Bull. New York State Dept. of Health, May, 1913.

THE KEEPING PROPERTIES OF DIGITALIS AND ITS PREPARATIONS

There has been much work in recent years on the variations in strength of digitalis and its preparations as found on the market.[1] Such variations may be due to two causes: (*a*) variations in the crude drug, and (*b*) variations due to the manner in which the drug and the various preparations made from it have been treated or prepared. It is now well known that the crude drug varies considerably in activity, but the causes of these variations are for the most part unknown.[2] The practical outcome of this work is the demonstration that in order to obtain preparations of uniform activity only physiologically tested leaves should be used. The preparations made from even a good sample of the crude drug may, however, vary greatly in activity. One of the most important factors determining this is the manner in which the drug is extracted. It has been shown that fluidextracts are, relatively, almost invariably weaker and show greater variations than do tinctures; this results from incomplete or irregular extraction. Hence the field of usefulness for the fluidextract is limited and physicians ordering tinctures should insist that genuine tinctures, not the pseudotinctures so often prepared from the fluidextract, should be dispensed.

Another important question concerning digitalis is the keeping properties of the drug and its preparations; the literature on this subject, with many original observations, has recently been discussed by Hatcher and Eggleston.[3] It is well known that the infusion of digitalis, although containing a small amount of alcohol, rapidly deteriorates. Several illustrations of the rapid deterioration of preparations containing only a small percentage of alcohol are to be found in the publications of Edmunds and Hale. The latter workers and also Weis, and Hatcher and Eggleston, have found the widely advertised preparation known as digalen to vary greatly in strength; this may also be due to the low alcohol content (7.5 per cent.). Hence physicians are justified in regarding with suspicion liquid preparations of digitalis containing less than 50 per cent. (the official strength) of alcohol; in fact, Hale has pointed out that tinctures made with 70 per cent. alcohol (the strength required by the Brussels Conference) have better keeping qualities than those made according to the U. S. P. The rapid deterioration of even properly made tinctures when diluted with water has been emphasized by Cushny[4] and also by Hatcher and Eggleston. The latter suggest that physicians should order the necessary dilution to be made by the patient each time he takes the prescribed dose or should employ a vehicle containing a sufficient amount of alcohol.

The next question to be considered is the keeping qualities of a good sample of digitalis or of properly made preparations of the drug. Hatcher and Eggleston consider the wide-spread view that such preparations are liable to rapid deterioration to be unfounded; briefly summarized their conclusions are as follows: Commercial digitalis leaves of good quality deteriorate but little on keeping; the rate of deterioration probably does not exceed 1.5 or 2 per cent. a year. The effects of age, of a small amount of moisture, and of light and heat have been much exaggerated, frequently for the purpose of the commercial exploitation of some specially treated leaves. Fluidextracts several years old also showed no great degree of deterioration, especially if they were made with alcohol stronger than that required by the present U. S. P. Heat below 120 C. (248 F.), applied for a reasonable length of time, did not cause deterioration in digitalis leaves or their preparations.

Modern pharmacologic research is thus throwing light on the variations in the therapeutic value of this old and valuable drug, showing what are the essential and what the unessential factors in the maintenance of a high standard.

THE CONDITIONS FOUND POST MORTEM IN CHRONIC TYPHOID CARRIERS

In view of the importance of the carrier in the spread of typhoid fever and of our present ignorance of any method by means of which the carrier may obtain prompt and permanent riddance of the bacilli, it becomes a matter of interest to study the conditions that are found post mortem in chronic typhoid carriers. The observations on this point are not numerous so far as may be judged from the literature. Without going into details, the results so far recorded, mostly in German literature, indicate that in fecal carriers the gall-bladder is the place where the bacilli vegetate. Usually biliary calculi are present and in about one half of such instances typhoid bacilli have been found in the stones.

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[1] The Biologic Standardization of Digitalis, editorial, THE JOURNAL A. M. A., June 12, 1909, p. 1931. Digitalis and Its Standardization, Pharmacology Department, same issue, p. 1938. Standardization of Digitalis, editorial, THE JOURNAL A. M. A., April 22, 1911, p. 1198. An Austrian Investigation of Commercial Digitalis Preparations, Propaganda Department, THE JOURNAL A. M. A., Jan. 11, 1913, p. 143.

[2] Hale, Worth: Bull. [illegible], Hygienic Laboratory, 1911.

[3] Hatcher and Eggleston: Am. Jour. Pharm., May, 1913.

[4] Cushny: Brit. Med. Jour., 1912, ii, 685.

Bindsell,[1] in his review of the literature, mentions fourteen cases; twelve of the patients were women, and in nearly all bacilli were found in the bile, and in many also in the liver and in the bile-ducts as well as in the contents of the intestines. In some cases no bacilli were found at all anywhere in the body although it was known definitely that during life typhoid bacilli had been excreted for some time after recovery from typhoid fever. These cases may be regarded therefore as examples of healed carriers, and it is of interest to note that here death occurred not longer than one year after the acute attack. It is known that carriers not infrequently rid themselves of the bacilli within a year or so after the inception of the carrier state.

The instance studied by Bindsell is that of a man who at the age of 67 passed through a mild attack of typhoid and remained a chronic fecal typhoid carrier until he died four years later. Bacilli were found in the urine also on three or four occasions; in the feces, however, they were present regularly as shown by frequent examinations. After death bacilli were found in pure culture in the bile in the gall-bladder and large ducts; they were present also in the small intestines and in the interior of stones in the gall-bladder.

Of special interest is the fact that in this case as in some others the walls of the gall-bladder were thick, chronically inflamed, and contained here and there heaps of bacilli that corresponded to typhoid bacilli in shape, size and staining properties. We have learned that in typhoid fever and in acute typhoidal cholecystitis the walls of the gall-bladder commonly show masses of typhoid bacilli, and it is an undecided question whether the bacilli reach the wall directly through the blood, lodging in the capillaries, or indirectly from the contents of the bladder which, it is held by some, becomes infected by bacilli excreted through the liver. Perhaps both these explanations are applicable. At all events, the study of the post-mortem conditions shows clearly that in chronic typhoid carriers of the fecal type typhoid bacilli vegetate in the bile in the gall-bladder (whence they are discharged into the intestines), and in some cases at least they appear to live on also in the walls of the bladder.

These facts explain sufficiently well why it is so difficult, indeed practically impossible, to cure chronic carriers. Opening and drainage of the gall-bladder have proved ineffective, most likely because the bacilli persist in its walls. Even complete removal of the bladder might not be sufficient because of the likelihood that bacilli may be present in the walls of the bile-ducts. Whether or not the conditions in chronic urinary carriers are in any degree analogous to those disclosed in chronic fecal carriers is not known.

Current Comment

MOUNTAIN SICKNESS IN THE ANDES

In descriptions of mountain sickness it has sometimes been maintained that the manifestations of disease attributable to high altitudes vary in different parts of the world. There might, accordingly, be an Alpine, an Andean or a Rocky Mountain sickness. If this were a definitely established fact, we should logically be compelled to seek at least some of the causal factors of the illness in agencies other than those of mere altitude itself. For altitude, *per se,* with its specific alterations in the barometric pressure and atmospheric relations is a fixed feature of mountain heights, independent of geographical locations or environmental climatic conditions. Ducceschi[1] has been investigating the probability of determinative local influences which might give special character to the mountain sickness in the South American Andes. In the readily accessible parts of these elevations the symptoms are not manifested, as a rule, until a height of 4,000 meters (13,123 feet) is reached. Electric phenomena of the atmosphere cannot be charged with responsibility for the genesis of the manifestations of illness, as has occasionally been asserted; and when the symptoms are in any sense unique, they are, according to Ducceschi, attributable to confusion or complication with other diseases. The types of manifestations seen represent the variable response of the organism to the changed make-up of the blood; they may be classed as respiratory, cardiopathic, nervous or cerebral in character. Ducceschi maintains, however, that the altered composition of the blood cannot be the sole cause of the varied symptoms, for occasionally these arise when any noteworthy changes in the composition of the circulating medium are out of the question. It is suggested as a possibility that the diminished atmospheric pressure may serve as a stimulus to the vagus endings in the lung. Thus a "vagus neurosis" would be called into play, acting reflexly to stimulate all the branches of the affected nervous system and exhibiting individual peculiarities of outcome in different persons. As contributory evidence in favor of the participation of the nervous centers, the observation may be mentioned that people who have become acclimated to altitudes experience upsets on a return to lower levels. Furthermore, it may be noted that seasickness, which is commonly described as a reflex neurosis with involvement of the vagus and its branches, has many features in common with mountain sickness. In some parts of South America we are told that the mal de montagne goes under the designation of "mountain seasickness." In any event it now seems quite certain that whatever the pathology of the disease manifestations, the essence of mountain sickness is the same wherever it is encountered, the world over; and the fundamental etiologic factor is the change in barometric pressure and the modifications in the atmosphere which this is responsible for. All else is incidental, variable and secondary.

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[1] Bindsell: Bakteriologischer Sectionsbefund bei einem chronischen Typhusbazillenträger, Ztschr. f. Hyg. u. Infektionskr., 1913, lxxiv, 369.

[1] Ducceschi, V.: Il mal di montagna o Puna nel Sud-America. Arch. di Fisiol., 1912, x, 77.

CAN ANIMALS UTILIZE NITRATES?

There has been a growing tendency in recent years to eliminate the sharp distinctions between the fundamental physiologic processes in animals and plants which were once believed to prevail. The animal organism has been shown in a variety of ways and by numerous illustrative changes to be endowed with a pronounced synthetic capacity such as was formerly ascribed solely to the plant organism. It can build new proteins, blood pigments, fats, etc., out of comparatively simple constructive materials. Quite naturally investigators have attempted to push the search for constructive powers further and further in the direction of the utilization of less complex "building-stones." In the case of the actual elements or very closely related compounds there is, of course, no evidence that the animal can duplicate the functions of the plant, as, for example, in constructing carbon dioxid or similar products into tissue substance or energy stores as do the vegetable forms of life. With respect to elementary gaseous nitrogen the problem has long since been settled. Nitrogen itself does not enter into the metabolic processes in any degree whatever. Lately the inquiry has again been directed to simple nitrogenous compounds, such as the nitrates. Can the animal organism duplicate the unquestioned performance of the plant in utilizing nitrogen furnished in the form of nitrates? Abderhalden and Hirsch[1] have conducted crucial experiments in this field of inquiry with definite results. Nitrogen introduced in the form of nitrate with the diet is quantitatively excreted again as such in the urine. It therefore takes no direct part in the performance of protein metabolism. For larger quantities this was to be expected, inasmuch as the nitrates are undoubtedly toxic under such conditions of dosage. We may now feel assured further that even small amounts of nitrates cannot replace protein in the dietary. Here then the distinction between animals and plants still remains sharply defined.

DEMENTIA TELEPHONICA

This aberration is said to have found place in German legal medicine. An indiscreet Berlin lawyer was adjudged guilty of slandering the post-office administration, which controls the telephone system under the Teutonic polity; here seems an absurdity in American eyes, for among us any citizen may (and generally does, to his heart's content) abuse the post-office or the street-cleaning or any other governmental department, without jeopardy of either purse or person. The particular offense of this Berlin attorney was that he called telephone girls "camels" and "sheep." The former term would hardly seem opprobrious, for the camel is a most estimable, patient creature. The term "sheep" also would seem unobjectionable, as indicating a mild-mannered creature, except for an occasional tendency to "butt in," a thing telephone girls have been known to do when conversation over the wire has reached its most engrossing periods. The culprit's defense was that telephone operators delight to torture the victim at the end of the wire; one day he had called a number nine times within three-quarters of an hour and each time had received the tantalizing answer that "the wire is busy"; complaining then to the central manager he learned that his connection had been free all the while. The court's medical expert testified after an examination of the defendant that the latter was of a highly nervous temperament, and that there were cases of men who had gone insane from telephonic vexation (*Telephonärger*), but that nevertheless he had not as yet passed beyond the state of legal responsibility. He was fined 260 marks ($65), which is after all a good deal of money. There are no doubt many, not only in Germany but also wherever else in civilization the telephone is in operation, who will sympathize with him.

MUTTON APPROVED

We recently commented on Fish's attempt to rehabilitate "bob veal" in the category of available animal foods.[1] Whatever the final outcome of this effort, or of attempts to discredit any other meat product in the eyes of a skeptical consumer, the place of mutton in the dietary has been secured. The nutrition experts of the U. S. Department of Agriculture[2] have given the meat of the sheep a clean and clear bill, sanctioning from their point of view the popularity which mutton and lamb have so long enjoyed as staple articles of diet. The generally wholesome character of these products is borne out by the government inspection work, which shows that slaughtered sheep seldom need to be rejected as unfit for food. In composition and nutritive value there is little choice between mutton and beef; each is well digested and almost completely utilized in the alimentary tract. And thus the question of choice in this case, as with so many articles of diet, narrows down, not to the problem of physiologic availability or underlying nutritive value, but to the palatability and relative cost. The demands of the taste and the limitations of the pocket-book are dominant factors here as elsewhere.

Medical News

CALIFORNIA

State Hospital Patients Transferred.—In order to relieve the congestion at the Stockton and Napa state hospitals, two hundred patients have been transferred from these institutions to the Agnews State Hospital.

Personal.—Dr. Winslow Anderson, San Francisco, has sailed for Europe.——Dr. Thomas W. Huntington, San Francisco, was given the honorary degree of LL.D. by the University of Vermont, June 25.——Dr. Samuel J. Gardner, assistant surgeon of the Southern Pacific Hospital, San Francisco, was operated on for appendicitis, recently.

Hospital Items.—Plans are being prepared for the new administration building for the Methodist Hospital Association to be located in Los Angeles. The building is to be four stories and a basement in height, 140 by 160 feet, and it is planned, eventually, to erect two four-story wings each 155 by 136 feet.——The Pomona Hospital, erected at a cost of $50,000, is completed and will be ready to receive patients some time this month. The building is of reinforced concrete, three stories and a basement in height and is intended to serve the district comprising the entire Pomona Valley.

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[1] Abderhalden, E., and Hirsch, P.: Die Wirkung des Salpeters (Natrium Nitrats) auf den Stoffwechsel, Ztschr. f. physiol. Chem., 1913, lxxxiv, 189.

[1] Is "Bob Veal" toxic? editorial, The Journal A. M. A., March 15, 1913, p. 834.

[2] Langworthy, C. F., and Hunt, C. L.: Mutton and its Value in the Diet, Farmers' Bulletin 526, U. S. Dept. of Agric., Washington, 1913.

ILLINOIS

To Build Sanatorium.—Dr. R. L. Eddington, Springerton, has purchased a lot in Lacon on which he states he intends to build a sanatorium.

Off for Europe.—Drs. D. M. Keith, John Green, S. R. Catlin and W. R. Fringer and Dr. and Mrs. Horace M. Starkey and Miss Starkey, all of Rockford, have sailed for Europe.

Medical School Favored.—Governor Dunne has signed the bill appropriating $4,500,000 for the University of Illinois for the next biennium. This includes $200,000 for the College of Medicine.

Wilgus Recalled.—Dr. Sidney D. Wilgus, superintendent of the Kankakee State Hospital, who resigned June 30, has been recalled by the board of administration, and will continue to serve until his successor is appointed.

Personal.—Dr. J. J. Leahy, Lemont, has been appointed sanitary inspector of the sanitary district.——Dr. William Barnes, Decatur, was injured in an automobile accident near Peoria, July 7.——Dr. J. D. Dickinson, Galva, was operated on in the Cottage Hospital, Galesburg, recently.——Dr. Edward L. Hill, recently appointed physician to the Southern Illinois Penitentiary, Chester, was severely injured in a gasoline explosion in his garage at Percy and is under treatment at a hospital in St. Louis.——The farm home of Dr. A. H. Arp, Moline, was destroyed by fire, June 30. The loss is estimated at $10,000, partially covered by insurance.——Dr. D. C. Kalloch, a member of the staff of the Elgin State Hospital, has resigned.——Dr. J. R. Flexer, Joliet, is said to have been committed to the Kankakee State Hospital.

Chicago

A Palatial Hospital.—The plans for the new Isolation Hospital which have been prepared provide for an institution to cost $280,000. Every patient will, it is said, have a room or cubicle of his own, with glass walls and provided with a telephone. The hospital is planned to accommodate 136 patients.

Personal.—Dr. James B. Herrick is taking a trip in the Rocky Mountains and will go to his summer home in Vermont, returning to Chicago about October 1.——Dr. Charles H. Miller started July 8 for a six weeks' trip through New England.——Dr. A. L. Lindsay Wynekoop has been elected chairman of the hygiene department of the West End Mother's Council.——Dr. Alexander W. Burke and Dr. Eugenia A. Miller-Klawans have sailed for Europe.

INDIANA

Alumni Election.—Dr. J. Don Miller, Indianapolis, has been elected president; Dr. R. A. Mitchell, Marshall, Ill., vice-president, and Dr. Alfred Henry, Indianapolis, secretary of the Alumni Association of the Indiana University School of Medicine.

Care of the Sick.—Three new clinics have been established by the Children's Aid Association, Indianapolis, especially to care for heat-stricken babies.——Dr. T. C. Kennedy, Indianapolis, has opened a free cancer clinic at his offices under the auspices of the People's Union.——The contract has been let for the construction of the basement story of the new pavilion of the Methodist Hospital, Indianapolis, to cost about $110,000.

Health Exhibit.—The State Health Commissioner has prepared a health exhibit which will be placed in the State House corridors on Sunday. An employee of the health board will be on duty to explain the exhibit and distribute circulars to the visitors. The exhibit is divided into sections treating on tuberculosis, oral hygiene, child welfare, fly prevention and clean milk.

Tuberculosis Notes.—The chief office of the Indianapolis Association for the Study and Prevention of Tuberculosis and of the Marion County Association will be located hereafter in the Public Savings Life Building. From these rooms the state and county red cross seal campaigns and the campaign of education will be conducted.——A new board of managers has been elected for the Twin Hill Tuberculosis Camp, Terre Haute, to take charge of the camp during the present season.

KENTUCKY

Would Buy McDowell Home.—The Frankfort Civic League has adopted resolutions urging the state to purchase the home of Dr. Ephraim McDowell, the pioneer ovariotomist, at Danville.

Tuberculosis Patients in Tent.—The directors of the Paducah City Hospital have decided to isolate the tuberculosis patients in a tent located on the hospital grounds where they will be under the care of the nurses of the hospital.

Tuberculosis Car Starts on Tour.—The health car of the State Tuberculosis Commission started June 24 on a two-years' tour of the state. The work of the car will include exhibits and also instructions in the conservation of health, prevention of disease and proper housing.

Personal.—Dr. Richard R. Elmore, Louisville, underwent operation in St. Joseph's Infirmary, July 3.——Dr. Charles G. Lucas, Louisville, who was operated on recently for appendicitis in St. Joseph's Infirmary, has returned home convalescent.——Dr. C. P. Burnett, Paducah, was operated on June 24 at St. Joseph's Infirmary, Louisville, for hernia.——Dr. John G. Cecil, Louisville, is reported to be critically ill at his home.

State Board Meeting.—At the meeting of the State Board of Health in Louisville, July 9, a resolution was passed that cases of whooping-cough and measles should be kept isolated and that persons suffering from either of these diseases should not be permitted to ride on railway cars or other public conveyances. The board adopted a standard of entrance requirements equivalent of a two years' course in college, applicable to all who intend to practice medicine in the state. The announcement was made that the $25,000 appropriated by Congress for use in fighting the spread of trachoma in the mountain district of the state became available July 1 and that the work would begin under the supervision of the State Board of Health and Dr. John Mullen, an official of the United States Public Health Service, immediately. An effort is being made to have those suffering from the severe forms of the disease treated in the Marine Hospital, Louisville. Of the ninety-one applicants who made satisfactory grades in the recent examination, fifty-eight will be issued licenses to practice medicine. The remainder were sophomores who were examined in certain subjects only.

LOUISIANA

Reciprocal Relations Established.—The Louisiana State Board of Medical Examiners announces that New Mexico and Wyoming have been added to the list of states with which Louisiana has established reciprocal relations.

Leper Captured.—After having eluded the police and health authorities since November last, Steve Loyocano, a leper 13 years of age, was captured by inspectors of the New Orleans Board of Health, June 25, and has been placed in the House of Detention.

Personal.—The gold medal of the American Medical Association for the exhibit of most general excellence and scientific value has been awarded to Dr. C. C. Bass, New Orleans, for his exhibit on "The Cultivation of Malarial Plasmodia in Vitro."——Drs. A. V. and H. A. Veazie have been granted a permit to operate an eye infirmary in New Orleans.

Health Cars Again Tour State.—The health exhibit cars of the Louisiana State Board of Health have resumed their tours of education and are making stops of twenty-four hours or longer at the various cities en route. The train is accompanied by Dr. Oscar Dowling, president of the State Board of Health, Dr. Sidney D. Porter, state sanitarian and director of the hookworm work, lecturers, demonstrators, etc.

Surgeons for Southern Pacific Lines.—It has been officially announced that on the installation of the new hospital service of the Southern Pacific System with Dr. R. W. Knox as chief surgeon, there are to be two division hospitals in Louisiana in addition to the general hospital service in New Orleans. The division hospitals will be in Lafayette in charge of Drs. F. R. Tolson and John Tolson and at Franklin in charge of Dr. B. W. Smith. Dr. E. Denegre Martin has been appointed division surgeon at New Orleans and Dr. J. E. Garrison at Donner. Dr. T. J. Dimitry has been appointed oculist at New Orleans and Drs. F. W. Parham and E. Denegre Martin have been made hospital surgeons. Dr. Paul T. Talbot has been appointed local surgeon of the road at New Orleans and Drs. A. C. King, R. L. Riley and A. J. Babin have been made local surgeons at Algiers.

MAINE

Personal.—Dr. Fred P. Webster, chairman of the Portland Board of Health, has notified the mayor and common council of his desire to retire at once.——Dr. Harrison J. Hunt, Bangor, has been appointed surgeon of the Crocker Land

Expedition which sails to the far north this month under the leadership of John B. MacMillan.

State Association Meeting.—The sixty-first annual meeting of the Maine Medical Association was held in Portland, July 2-3, and the following officers were elected: president, Dr. W. C. Peters, Bangor; vice-presidents, Drs. Eben J. Marston, Bath, and C. T. Emery, Biddeford; secretary, Dr. John B. Thompson, Bangor, and treasurer, Dr. Edwin W. Gehring, Portland; councilors, Drs. Stephen Webber, Calais, and T. S. Dickison, Houlton. Portland was decided on as the next place of meeting.

MARYLAND

Baltimore

Quarantine Station Retained.—The city council ordinance authorizing the mayor to dispose of the quarantine station to the federal government was voted down promptly and without debate, the commissioner of health having returned it with unfavorable comment.

Johns Hopkins Hospital Report.—The annual report for the Johns Hopkins Hospital for the year ended January 31, shows that during the year there were 5,642 admissions and 5,597 discharges, leaving 352 patients in the hospital February 1. There were 87,274 visits to the dispensary. Urgent appeal is made by the superintendent for increased endowment. Two more public wards and additional stories for the present ward buildings are needed.

Personal.—Dr. Christian Deetjen announces that hereafter he will limit his practice to physical therapeutics. He has equipped his residence in Eutaw Place with apparatus for electro-, hydro- and mechanotherapy and has also established an x-ray and radium laboratory.——Dr. William S. Bair is said to have declined an offer of the chair of orthopedic surgery at Leland Stanford Junior University, San Francisco. ——Drs. Ridgely B. Warfield and Thomas H. Buckler have sailed for Europe.

MASSACHUSETTS

Mission Schooner Returns to the North.—Dr. Wilfred T. Grenfell's schooner, *George B. Cluett*, which recently returned to Boston from Labrador, sails next week on her return trip to the mission settlements in Labrador and Newfoundland. She takes with her Dr. and Mrs. John Mason Little, St. Anthony, N. F., formerly of Boston, Dr. Hamrick, New York, and several nurses.

Personal.—Major Frank P. Williams, M.C., M.V.M., Brookline, assigned to Eighth Infantry, has been appointed surgeon-general of the Massachusetts Militia, vice Brigadier-General C. G. Foster, retired.——Dr. Francis D. Donoghue, Boston, sailed for Europe, July 12.——Dr. Thomas Edward Duffee, formerly of Gardner, Mass., has moved to Providence and has been appointed chief surgeon of clinics in the eye, ear, nose and throat department of the Sales Memorial Hospital, Pawtucket.——Drs. Susan Fenton, Boston, and E. B. Percy, Brookline, have sailed for Europe.

Hospital News.—The new City Hospital, Aldenville, is almost completed and will be ready for occupancy this month. The main portion of the building will be devoted to ordinary hospital purposes and in the wings, tuberculosis and contagious disease patients will be cared for.——A recent fire in the Notre Dame Hospital, Lowell, did more than $2,000 worth of damage, but no casualty to patients occurred.——The Boston Consumptives Hospital Department has established a night clinic at the outpatient department of the hospital at 13 Burroughs Place, in charge of Dr. Cleaveland Floyd——Dr. Eva W. Lake has opened a sanatorium for convalescents and sufferers of nervous ailments at Norwood.

MINNESOTA

Convent Transferred to Hospital.—The Visitation Convent, St. Paul, has been transferred to the Norwegian Hospital Association, which will move into its new quarters in September.

Personal.—Dr. J. Frank Corbett, for thirteen years state bacteriologist of Minnesota, has resigned to devote his entire time to his work in the department of experimental surgery in the University of Minnesota School of Medicine. Dr. Elizabeth A. Woodworth will have charge of the state department for the present.——Dr. A. J. Cox, Tyler, who recently sued a fellow townsman for $30,000 for defamation of character, was given a verdict of $10,000 in the St. Paul District Court, June 26.

Tuberculosis Notes.—The petition of Dr. Howard Lankester, commissioner of health of St. Paul, requesting the county board to take the necessary action to commit a tuberculosis patient to a sanatorium has been referred to the board's committee of health, the county attorney and the state and county board of control.——The Children's Hospital at Nopeming, the tuberculosis sanatorium of St. Louis County, located about eleven miles from Duluth, has been opened and there are already nineteen patients in the cottage.——Hennepin County announces that it will build a tuberculosis sanatorium under the county sanatoria act, passed by the last legislature.

NEBRASKA

State Secretaries' Election.—At the annual meeting of the Board of Secretaries of the State Board of Health held in Lincoln, July 2, Dr. E. Arthur Carr, Lincoln, was reelected president; Dr. P. F. Dodson, Wilber, was elected vice-president; Dr. H. B. Cummins, Seward, secretary, and Dr. C. T. Burchard, Falls City, treasurer.

NEW YORK

Personal.—Dr. A. P. Van Deinse, Sayville was operated on for appendicitis in Trinity Hospital, New York City, July 6, and is reported to be doing well.——Dr. R. J. Kingston, Newburgh, has resigned as physician for the Samuel Beskin Mutual Benefit Society after a service of twenty-five years.

Delay in Opening of Preventorium.—The Preventorium for the care of children who have been exposed to tuberculosis, which is located on the Mecklenburg Road about five miles from Ithaca, did not open July 5, due to lack of funds. It is, however, hoped that the opening will be delayed only a few days.

New York City

Off for Europe.—Dr. and Mrs. Clarence Reginald Hyde, Dr. and Mrs. J. H. Storer, Dr. and Mrs. Louis Faugeres Bishop and Drs. Martha Wollstein, Louis Livingston Seaman, Frederick H. Albee and Howard Van Rensselaer have sailed for Europe.

Hospital Society Incorporated.—The Building and Endowment Fund Association of Washington Heights Hospital has been incorporated. The object of the association is the raising of funds to be used solely to acquire real property, erect buildings thereon and endow them for the Washington Heights Hospital.

Traction Company Association Medical Inspection Bureau.—The Brooklyn Rapid Transit Company has made permanent the medical inspection bureau which was started tentatively last December. It gives free medical treatment to all operating employees of its system and requires medical inspection before excuses for illness are accepted. The bureau is in charge of Dr. H. H. Stearns and physicians are in attendance at the division in East New York and at Thirty-Ninth Street and Fifth Avenue, South Brooklyn, at certain stated hours of the day.

Poliomyelitis Admitted to Rockefeller Institute Hospital.—The hospital of the Rockefeller Institute for Medical Research announces that beginning with July 15, patients suffering from acute poliomyelitis will be admitted to the hospital. The cases have not been so numerous during the past two years, although a considerable number have been reported, and it seems likely that there will be a large number of cases arising in the city during the coming season. Physicians who desire to have such patients admitted to the hospital should telephone to Plaza 6800, when an ambulance will be sent.

Personal.—Dr. Wilfred H. Manwaring, formerly assistant in pathology and bacteriology in the Rockefeller Institute for Medical Research, has been appointed professor of bacteriology and immunity in Leland Stanford Junior University, San Francisco.——Dr. Enrico Salvini, ambulance surgeon to the Lincoln Hospital, was thrown from the ambulance and seriously injured in a collision with a motor truck, July 3.——Dr. S. R. Klein has opened a pathologic and bacteriologic laboratory in the Sayre Private Hospital, Mount Vernon, N. Y., and in connection with this a pasteur institute for the treatment of hydrophobia has been instituted.

The Death-Rate.—The death-rate for the week ended July 5 was 12.54 per 1,000 population as against 12.84 for the corresponding week of 1912. The causes showing an increased mortality were whooping-cough, chronic heart and kidney disease combined, and violence. There were nineteen deaths reported from heat stroke against one for the same week of 1912. Notwithstanding the adverse weather conditions, the infant mortality was considerable below that of the corresponding week of last year. The infant mortality rate for the entire city for the week was 89 per 1,000 children born as against a rate of 104 during the corresponding week of 1912, a decrease of 14 per cent. The death-rate for the first twenty-six weeks of 1913 was 15.04 per 1,000 as against 15.06 during the corresponding period of 1912.

OKLAHOMA

Mahr Exonerated.—A jury in Judge Clark's section of the District Court, on July 4, found Dr. J. C. Mahr, Oklahoma City, State Health Commissioner, not guilty of the charges of habitual drunkenness, gross neglect of duty and corruption in office, for which he was indicted by the Oklahoma County grand jury in April last.

OREGON

Personal.—Dr. G. C. Bellinger has been appointed superintendent of the State Tuberculosis Institute, Salem, vice Dr. P. H. Fitzgerald, resigned.——Dr. E. A. Sommer has been elected a member of the board of directors of the Portland School District, vice Mr. I. N. Fleischner, resigned.

Medical Board Election.—At the meeting of the State Board of Medical Examiners held in Portland, July 4, it was decided that action should be taken against the physicians of the state who are practicing without a license. The board elected the following officers: president, Dr. Herbert S. Nichols, Portland; secretary, Dr. L. H. Hamilton, Portland, and treasurer, Dr. H. L. Henderson, Astoria.

PENNSYLVANIA

Personal—Dr. Ella N. Ritter, Williamsport, sailed for Europe, July 3.——Dr. W. R. Hamilton, Pittsburgh, was knocked from the running board of a street car by a wagon, July 7, and was taken to the Allegheny General Hospital. He was not seriously injured.

Fire at Insane Hospital.—On July 7, a fire that destroyed an old roller mill on the grounds of the South Mountain Insane Hospital, near Wernersville, caused great excitement among the 900 inmates but 300 male patients organized a fire brigade and fought the flames, saving the adjoining structures. The loss is $6,000.

Small-Pox in State Following Circus.—Two cases of small-pox were discovered July 10, at East Lebanon and the State Health Department at once took charge of both cases. Commissioner of Health Porter of New York has notified State Health Commissioner Dixon that small-pox has been found in Hagenbeck Circus at Albany. This show has been to various towns throughout this state, where small-pox has developed and an inspection of the circus was made at the suggestion of Dr. Dixon. On July 5, four cases were reported to the State Health Department from various parts of the state.

Physician Asks Segregation of Feeble-Minded.—On July 11, Dr. Charles S. Frazier called on Governor Tener to sign a bill appropriating $50,000 for the construction on state land of an institution for feeble-minded women and girls.

"There are 17,000 feeble-minded men, women and children in this state, only 2,263 of whom are in proper institutions.

"There are 7,000 women of child-bearing age at large. Statistics show that each bears on an average of nearly eight children, of whom five live to child-bearing age.

"This means that within 15 to 20 years a horde of 35,000 feeble-minded women, capable of procreation may be thrust upon the state.

"Feeble-mindedness is hereditary, beyond peradventure, and is incurable.

"Unless the state takes drastic measures for proper segregation, feeble-mindedness will increase so materially as to become a positive menace to the community.

"Nearly every state save Pennsylvania has proper institutions for the care of this class of unfortunates. For this reason it is imperative that Governor Tener should sign the appropriation bill now before him."

Philadelphia

Heat Increases Infant Mortality.—According to the records of the Bureau of Health for the week ended July 12, there were 130 deaths of children under 1 year of age and forty-two between the ages of 1 and 5. The number of new typhoid fever cases reached forty-three, eight more than the preceding week. Most of these cases were from the section of the city supplied by the Torresdale Filter Plant.

Babies' Clinic.—Another clinic for the education of mothers in the care of their infants was opened in the Ludlow School at Fourth Street and Montgomery Avenue, July 9. Under the direction of Mrs. Margaret Simon, one of the municipal nurses, who has charge of the weekly clinics, lessons in bathing and proper dressing of children are given and the preparation of milk is also demonstrated.

Small-Pox on Ship.—Fourteen hundred passengers on the North German Lloyd liner *Koln* were vaccinated and 189 were detained at the quarantine station at Marcus Hook, on July 12, as the result of the discovery of a case of small-pox. Twelve of those detained show symptoms of the disease. This ship docked on July 11, having sailed from Bremen June 28 with 1,400 cabin and steerage passengers. Though the case is serious, the quarantine physician does not anticipate a spread of the disease.

Personal.—Dr. and Mrs. Ralph Pemberton and Drs. Charles A. O'Reilly, Milton B. Hartzell, William M. Sweet and William Zentmayer have sailed for Europe.——Medical Director J. C. Byrnes, U. S. Navy, retired, has been appointed medical director of Jefferson Medical College Hospital.——Dr. Charles R. Leonard, chief of the Polyclinic Hospital staff is reported to be in serious condition from the over-use of the x-ray. It has already been necessary to amputate his hand and arm in the effort to check the spread of the disease.

RHODE ISLAND

New Officers.—Rhode Island Medicolegal Society at Pawtucket, July 3: president, Dr. Daniel S. Latham, Auburn; secretary, Dr. Carl R. Doten, Providence (reelected).

Personal.—Dr. Helen C. Putnam, Providence, has been elected vice-president of the department of child hygiene of the National Educational Association.——Dr. W. Louis Chapman, Providence, has been awarded the $200 prize offered by the trustees of the Fiske Fund, for his paper on "The Etiology, Pathology and Treatment of Phlebitis."

Resolutions Regarding Dr. Morgan.—At the meeting of the Westerly Physicians' Association, July 3, resolutions were unanimously adopted setting forth the sincere regret of the members of the association at the death of Dr. John Howard Morgan and tendering its sympathy to the family and friends.——The Rhode Island Medicolegal Society at its annual meeting appointed a committee on resolutions regarding the death of Dr. Morgan.

TENNESSEE

Hospital Cornerstone Laid.—At the exercises incident to the laying of the cornerstone of the Galloway Memorial Hospital, Nashville, July 7, the principal address was delivered by Dr. John A. Witherspoon.

Sewanee Gives up Medical Department.—The Board of Regents of the University of the South, Sewanee, "regretfully relinquishes for the present, at least, the design of establishing a medical department in the city of Nashville." Resolutions containing this declaration have been adopted by the board of regents.

Personal.—R. F. Kitworth, Knoxville, has been appointed a member of the State Board of Osteopathic Examiners, vice Meyer Williams, Nashville, resigned.——Dr. Z. D. Massey, Sevierville, state prison physician, was operated on in St. Thomas' Hospital, Nashville, for appendicitis, and is reported to be improving.——Dr. J. G. Myer, Gallatin, has been elected a member of the staff of the Macon (Ga.) Hospital.

WEST VIRGINIA

Personal.—Dr. Harriet B. Jones, Wheeling, sailed for Europe, July 10.——Dr. W. C. Etzler has been appointed health officer and Dr. Marshner, assistant health officer of Wheeling.

State Board Appointments.—Dr. S. L. Jepson, for eleven years health officer of Wheeling and formerly secretary and president of the State Medical Association, has been appointed a member of the State Board of Health and will succeed Dr. H. A. Barbee as secretary. The other new members of the board are Drs. J. L. Pyle, Chester; J. H. Shipper, Gerrardstown; J. A. Rusmusell, Gassaway; W. J. Davidson, Parkersburg; H. A. Brandebury, Huntington; George P. Daniel, Marshes, and G. D. Ling, West Union.

GENERAL

District Society Meeting.—At the annual meeting of the Iowa and Illinois Central District Medical Association held at the Outing Club, Davenport, the following officers were elected: president, Dr. P. A. Bendixen, Davenport, Iowa; vice-president, Dr. F. H. Gardner, Moline, Ill.; secretary, Dr. L. W. Littig, Davenport, Iowa, and treasurer, Dr. F. H. First, Rock Island, Ill.

Tri-State Society Meeting.—The fortieth annual meeting of the Northern Tri-State Medical Society (Indiana, Ohio and Michigan) was held in South Bend, Ind., July 8. Dr. George

W. McCaskey, Fort Wayne, Ind., was elected president; Dr. T. F. Wood, Angola, Ind., vice-president; Dr. G. W. Spohn, Elkhart, Ind., secretary, and Dr. J. A. Weitz, Montpelier, O., treasurer. Kalamazoo was selected as the place of the winter's meeting.

Bequests and Donations.—The following bequests and donations have recently been announced:

Various German hospitals and charities of New York, $5,000 from the Hamburg-American Line, fees received from visitors who inspected the new steamer *Imperator*.

Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, one-half of a bequest of $20,000, one-half to be used for the establishment and maintenance of a free bed in the children's ward of that institution in memory of Sylvester Churchill, U. S. A., and one-half for a free bed in the nervous disease ward, in honor of Dr. John K. Mitchell.

Presbyterian Hospital, Baltimore, $50,000, benevolent fund of the Ladies' Aid Society of that institution and the Home of the Merciful Saviour for Crippled Children, each $5,000 by the will of Mrs. Jane McKee Norris.

Anticancer Fight.—The American Society for the Control of Cancer has nominated a committee of influential physicians to take up actively the national movement for the prevention of the spread of cancer. The executive committee of the society consists of Drs. Joseph C. Bloodgood and Thomas S. Cullen, Baltimore; Dr. LeRoy Brown, St. Paul, Minn.; Drs. George E. Brewer, Livingston Farrand, Howard Lilienthal, James Ewing, William E. Studdiford, Robert Abbe and D. B. Delevan, all of New York City; Dr. F. F. Simpson, Pittsburgh; Drs. A. D. Bevan and Frederick R. Green, Chicago; Dr. C. Jeff Miller, New Orleans; Dr. Charles A. Powers, Denver; Reuben Peterson, Ann Arbor, Mich.; Dr. W. T. Councilman, Boston; Dr. Edward J. Ill, Newark, and W. J. Mayo, Rochester, Minn. The chief aim of the committee is to educate the public on the symptomatology of cancer and the imperative need of early diagnosis and immediate remedial steps.

LONDON LETTER

(From Our Regular Correspondent)

London, July 7, 1913.

The International Medical Congress

In consequence of the death of Sir Henry Swanzy of Dublin, president of the section of ophthalmology, Sir Anderson Critchett, one of the vice-presidents, has been appointed to the position. The following subjects will be discussed: "The Pathogenesis of Chronic Uveitis, excluding the Syphilitic, Tuberculous and Sympathetic Varieties," Fuchs (Vienna) and de Schweinitz (Philadelphia); "Glaucoma Operations, with Special Reference to the Comparative Results Obtained by Iridectomy and Its Recent Substitutes," Lagrange (Bordeaux), Priestley Smith (Birmingham) and Lieutenant-Colonel R. H. Elliot, I.M.S.; "Affections of the Eye Produced by Undue Exposure to Light," C. von Hess (Munich) and J. Herbert Parsons (London); "Anaphylaxis in its Relation to Ophthalmology," Dr. Morax (Paris) and Dr. von Szily (Freiburg).

The president of the section of neuropathology is Sir David Ferrier, F.R.S. Dr. J. Babinski of Paris, and Professor D. Rothmann of Berlin will open the discussion on the "Symptoms of Cerebellar Disease and their Significance." M. André Thomas, M. Mendelssohn, Dr. R. Bárány, and others will take part in the discussion. Dr. Bárány will give a demonstration of his method of investigating cases of cerebellar disease. Dejerine of Paris and Liepmann of Berlin will open the discussion on "Motor Aphasia, Anarthria and Apraxia." The discussion will be continued by M. Henri Claude, M. Ernest Dupré, M. Felix Rose, Dr. J. S. Collier, Dr. S. A. K. Wilson, M. V. Monokow, M. H. Gutzmann, M. Heveroch and others. A meeting will take place at the National Hospital, Queen's Square, the great hospital for nervous diseases in this country to which all our most celebrated neurologists are attached, and patients will be exhibited illustrating the various forms of family and hereditary diseases of the nervous system. There will also be an exhibition of pathologic specimens. Oppenheim of Berlin and Spiller of Philadelphia will open a discussion on the "Relations of the Myopathies." The discussion will be continued by M. Huet, M. Félix Rose, M. G. Etienne, Madame Long-Landry, M. Mendelssohn, Dr. Batten and others. A joint discussion will be held with the surgical section on the "Treatment of Tumors of the Brain and the Indications for Operation." It will be opened by Bruns (Hanover), Cushing (Harvard), von Eiselsberg (Vienna) and Dr. H. H. Tooth. These will be followed by M. Babinski, M. Henri Claude, M. J. Sicard, M. Jumentié, M. de Martel and others. Dr. F. W. Mott and Professor Nonne (Hamburg) will open a discussion on the "Nature of the Condition Termed 'Parasyphilis.'" The discussion will be continued by M. Dejerine, M. Babinski, M. J. Sicard, M. A. Leri, M. de Massary, M. Charpentier, M. Sezary, M. J. Tenel, M. G. Etienne, Dr. Henry Head, Dr. James McIntosh and others.

A Historical Medical Museum

At 54A Wigmore Street there has been established by Mr. Henry S. Wellcome a historical medical museum, the only institution of the kind in this country. It contains a large and interesting assortment of objects which Mr. Wellcome has been collecting for many years and will be open to visitors to the International Medical Congress. The museum has been formally opened by Dr. Norman Moore, president of the section of the history of medicine in the International Medical Congress, in the presence of a distinguished audience including the presidents of the College of Physicians and Surgeons. Every subject in connection with the history of medicine from its earliest beginnings among savages down to the present day is illustrated, including fetishes, amulets and charms used in Africa, Polynesia and other parts of the world. There is a large collection of Roman votive offerings excavated chiefly at the temple of Aesculapius on the Tiberine Island and at the temple of Maternity in Capua, and also modern votive offerings from Italy, Portugal and other countries. Surgical instruments of all ages, appliances such as ancient feeding-bottles and manacles used to restrain the insane are shown. Other objects are personal relics, among which are such articles as medicine chests that belonged to Nelson and Wellington, the first tooth-brush used in this country, letters and relics of Edward Jenner, instruments of torture, reproductions of ancient hospital wards and old apothecaries' shops. Numerous portraits of eminent physicians, and paintings relating to the history of medicine are on view. The history of the recent development of tropical medicine—our knowledge of plague, malaria, yellow fever, sleeping-sickness, pellagra and other tropical diseases—is illustrated by maps, charts and diagrams prepared under the direction of Dr. L. W. Sambon, whose researches into the etiology of pellagra have revolutionized our views. It will thus be seen that the museum is a most interesting addition to the International Congress. It is intended to form the nucleus of a permanent museum in London, but its ultimate location and custodians have not yet been determined.

British Hospitals

Sir William Osler presided at the annual conference of the British Hospitals' Association which took place at Oxford. In his presidential address he contrasted the methods of colonial and American hospitals with those of British hospitals. A special feature of the British system was the admirable quality of the smaller institutions, such as the county hospitals. As regards the voluntary system, his advice was: "Give it up, it is antiquated and it is not going to continue." They must make up their minds to accept the principle of taking pay in the general hospitals. There was not a general hospital in the United States or Canada which did not take all the money it could get from all classes of patients. A striking contrast between the American and British hospitals was the fact that in England everything was done for the poor, who were rich in hospital care and treatment, while nothing whatever was done for the rich, who were the most neglected people in the country. The experiences of the rich in this matter had alienated very largely the upper classes from the profession of science and medicine. Many nursing homes were admirable and up to date, but many were not, and not one could take care of a patient as well as the general hospital. Osler would like to see every general hospital with a private pavilion; they could be made to pay very well. The clinical laboratories and pathologic arrangements of British hospitals were not out of date, because they had never been in date. They were hopelessly behind the times. It was necessary for them to reform and to rearrange their ideas, because many of them were pig-headed, obstinate and hopelessly ignorant on this question. Osler recommended that a consultant student-doctor, not practicing generally, should be connected with every hospital, and suggested the adoption of the Continental system of postgraduate courses in connection with county hospitals. Every hospital should be a center for the medical profession, and no doubt that would be much promoted by the linking of the hospitals by the insurance scheme. If the general hospitals were alienated from the insurance doctor, a state service was the only alternative. They must make every insurance doctor feel that the hospital was the place to which he should go for advice and aid in special emergency.

The National Insurance Act

An amending bill has been introduced by Mr. Lloyd George to remedy certain defects which the working of the national insurance act has revealed, but only one concession has been made to the medical profession. Voluntary contributors will be excluded from medical benefit when their contribution exceeds $800 per annum. In the original act workers aged over 50 received reduced benefits, those over 60 still further reduced benefits, and over 65 insurance was possible only to the extent of subscriptions paid by the workers and their employers. All these distinctions are now removed. A medical research committee has been appointed, arrangements for which have been provided in the act. It includes Sir Clifford Allbutt, Dr. William Bulloch (bacteriologist), Dr. Matthew Hay (professor of forensic medicine and public health), Dr. F. G. Hopkins (reader in chemical physiology in the University of Cambridge) and Sir William Leishman (professor of pathology, Royal Army Medical College). The duty of the committee will be to formulate a plan for research into tuberculosis. The committee will also deal with the collection and publication of results. A sum of $185,000 per annum is provided for expenses. There will also be an advisory council which will consider the scheme promulgated by the committee and make criticisms and suggestions for seeing that adequate consideration is given to the different problems arising and the various kinds of research work going on in the different parts of this country and in foreign lands.

PARIS LETTER

(From Our Regular Correspondent)

Paris, June 27, 1913.

Vaccine Therapy of Whooping-Cough

An interesting paper by Drs. C. Nicolle and A. Conor was read recently before the Académie des Sciences on some attempts at vaccination of whooping-cough by inoculation of living cultures of Bordet's bacteria, which these doctors used during the epidemic which raged in Tunis last spring. These cultures on agar-potato-blood, made into an emulsion in physiologic solution of sodium chlorid, were kept at 46 C. (114.8 F.) for thirty minutes, which does not affect their vitality, then repeatedly washed and centrifuged so as finally to obtain a perfectly homogeneous emulsion of bacteria, isolated and deprived of all foreign substances. For use in vaccination, each drop of the emulsion (representing about 400 million bacteria) is diluted with 2 c.c. of physiologic salt solution. Because of the difficulty of intravenous inoculation of very young children, Drs. Nicolle and Conor inject it under the skin of the thigh, from 1 to 5 drops of emulsion each time. The inoculations are repeated every two or three days. The authors have observed no general or local reaction. Of 122 children treated thus, 18 have not been seen after the first inoculation. Of the remaining 104, there have been 37 cures (complete cessation of cough), or 35.37 per cent.; 40, or 38.46 per cent., improved (notable diminution of cough), and 27, or 25.96 per cent. remained stationary. In the cases of cure, improvement became manifest very rapidly, generally on the first or the second inoculation. The nightly coughing spells diminished in intensity and number. Out of the 37 cures, 29, or 78.38 per cent., occurred after from two to five inoculations, that is in from three to twelve days. In view of the often discouraging duration of whooping-cough, the results obtained by Dr. Nicolle and Dr. Conor are distinctly encouraging.

Increase of the Cost of the Medical Course

As I have already mentioned, the cost of the course leading to the degree of doctor of medicine has been increased from $275 (1,395 francs) to $328 (1,640 francs).

The Bouchard Prize

Professor Bouchard, president of the Association française pour l'étude du cancer, has given the association the sum of $1,000 (5,000 francs) to reward the authors of the best work on pathogenesis of cancer. According to the conditions of the gift, the prize will be awarded at the end of 1915. Only those will be considered who have presented papers on pathogenesis of cancer before the association from Feb. 15, 1913, to the end of July, 1915, and have published their papers in the bulletins of their sections. The papers will be considered by a committee of the association, and the members will vote in secret on the conclusions of the committee. In case of disagreement between the association and the committee the award of the prize may be postponed until the end of 1916, in which event the works presented to the association and published in its bulletins before that date will be allowed to compete. The prize may be divided.

Medical Examination of Chauffeurs

M. Bernard Augé, a member of the Chamber of Deputies, has just offered a bill providing that every applicant for a diploma as a chauffeur shall present a medical certificate attesting that he has (1) a good constitution, (2) normal sight, (3) normal hearing, (4) no organic lesion of the heart, pleura or kidneys liable to cause sudden fainting and (5) so far as it is possible to show, no neuropathic affection such as monomania, hysteria or epilepsy. M. Augé offers as the reason for his bill the belief that in a great number of cases of unexplained accidents, the health of the chauffeur is at fault.

Personal

The Société de psychothérapie, d'hypnologie et de psychologie, June 24, unveiled the bust of Dr. Dumontpallier in the hôtel des Sociétés savantes. Dr. Dumontpallier died fourteen years ago. He was secretary-general of the Société de biologie and president of the Société médicale des hôpitaux de Paris. He took part in the principal events which ushered in the renaissance of psychologic studies in France. He presided in 1889 over the first international congress of hypnotism at a time when it took courage to do so, and on July 20, 1891, he founded the Société d'hypnologie et de psychologie, of which he was appointed permanent president.

On the same day took place the unveiling of the monument erected in the court of the Hôtel-Dieu to the memory of the surgeon Guinard, who was assassinated two years ago almost on the same spot by an insane man.

On June 24 the Académie de médecine elected two foreign correspondents in the division of surgical pathology and operative medicine, Dr. William J. Mayo of Rochester, Minn., and Dr. Ackerman of Stockholm.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, June 21, 1913.

Death of Prof. Max Kassowitz

A few days ago, Kassowitz, the eminent specialist on diseases of children, died at the age of 71 years, after a very short illness. He had a brilliant career. He graduated at the age of 21, and soon his gifts as a clear thinker and keen observer enabled him to gain the esteem of his confrères and to build up an extensive practice. He was one of the first to point out the value of phosphorus-cod-liver-oil medication in rachitic conditions, and numerous publications dealing with the diseases of the ossification and the affections of the bones in infants appeared from his pen. He also studied the influence of syphilis, especially the hereditary forms, on children, and from his small "ambulatory" department came forth many original observations and papers pertaining to pediatrics. Kassowitz was also one of the earliest and most arduous leaders of the anti-alcohol movement in this country, and the rapid increase of total abstinence among medical men is in a high degree the result of his incessant efforts at convincing doctors of the harmfulness of this liquid. The antivaccination movement found in him one of its strongest opponents, and he lived to see the triumph of his ideas, as compulsory vaccination is practically now in force in Austria. The numerous pupils of Kassowitz have spread his thoughts over the country, and his death means a real loss to scientific life here.

The Problem of Ozena

At a recent meeting of the Vienna Gesellschaft der Aerzte, Dr. Hofer read a paper on the experiments conducted by him in the Serotherapeutic Institute of Vienna at a request of Dr. Perez, the ambassador of Argentina in Austria. Dr. Perez isolated a special bacillus some years ago from noses affected with ozena. Since this disease is fairly common here, the investigation has much interest for Austria. Dr. Hofer actually found that the assertions made regarding the existence of an ozena bacillus were justified. The micro-organism could be isolated from the secretions of ozena and could be grown on agar. When injected into guinea-pigs or rabbits, it caused a purulent discharge from the nose, with subsequent atrophy of the lower turbinated bone. The smell of the cultures, as well as that of the discharge from the nose of infected animals, was the same as is observed in persons suffering from ozena. Dr. Perez says that the disease is transmitted by close contact and by the use of infected towels and handkerchiefs or by personal uncleanliness. The illness occurs often in several members of the same family, and starts often in early youth. In the discussion, it was pointed out that atrophy of the bone is primary, and the atrophy of the mucous membrane a secondary manifestation. All speakers agreed on the necessity of a general investigation, all over the world, of ozena cases. If the bacillus of Perez should be the actual etiologic factor, the hitherto so unsatisfactory treatment of this disease would undoubtedly become more hopeful, as a vaccine should do good service in this respect.

Abderhalden Refuses to Come to Vienna

Abderhalden, the young scientist of Halle, who has won so much renown by his researches into the physiology of metabolism, was asked to accept the post of chief of the Vienna Medical Chemical Institute, as Professor Ludwig had to resign his position owing to old age. Abderhalden found it unsatisfactory to come to Vienna, since the institute to be placed at his disposal is by no means equivalent to that which he now controls, and the new establishment will not be ready before two years. His refusal has caused profound regret in medical circles and serves once again as a warning to our officials, who do not yet understand that the best men want also the best means for their work. Economy applied at the wrong place—for that is the reason why the chemical institute has not been built yet—has resulted in a serious loss to the Vienna University.

Marriages

John Chandler Shirley, M.D., Huron, S. Dak., to Miss Mildred Edna Hoyman of Bowman, N. Dak., at Ramona, S. Dak., June 24.

George H. Grimmell, M.D., Colorado Springs, Colo., to Miss Bonnie Vaughan of Detroit, Mich., at Raton, N. Mex., recently.

Frederic B. M. Cady, M.D., Cambridge, Mass., to Miss Edith L. Mott of Morristown, N. J., at Bridgewater, Mass., June 19.

Ross Clair Speir, M.D., Furman, Ala., to Miss Emma Parker of Prairie Point, Miss., at Birmingham, Ala., June 29.

Albert Alonzo Peterson, M.D., Elizabeth, Pa., to Miss Christine Metcalf of Leechburg, Pa., at Pittsburgh, June 25.

Charles Curtis Wallingsford, M.D., Geneva, Neb., to Miss Mayme Elizabeth Larson of Sioux Falls, S. Dak., June 25.

Arnold Frederick Plankers, M.D., St. Paul, Minn., to Miss Marie Bernadette De Beaulieu of Chicago, June 28.

William Arthur Toland, M.D., Pottstown, Pa., to Miss Harriet Catherine Kase of Danville, Pa., June 26.

Walter Leonard Albin, M.D., University Place, Neb., to Miss Anna Fay Hanson of Crete, Neb., June 26.

John Shively Coughlan, M.D., Berkeley Springs, W. Va., to Miss Mary Gootee of Bethel, Del., June 24.

Enoch Marvin Mason, M.D., Birmingham, Ala., to Miss Helen Steiner of Montgomery, Ala., July 15.

James Robert McCord, M.D., Atlanta, Ga., to Miss Marion Crawford Roberts of Utica, N. Y., June 25.

Courtland Burgett Meuser, M.D., Oshland, Ohio, to Miss Naomi J. Holmes of Galion, Ohio, June 26.

Walter C. Myers, M.D., to Miss Georgia Newman, both of Savannah, Mo., at Troy, Kan., June 26.

Marion L. Robey, M.D., Maiden Rock, Wis., to Miss Matilda J. Anderson of Bay City, Wis., recently.

Lawrence Edward Coen, M.D., to Miss Emma Elizabeth Hines, both of Passaic, N. J., July 1.

Ralph Graham, M.D., Monmouth, Ill., to Miss Ella Margaret Griffith, at Monmouth, June 25.

Laurell Lavergne Lugar, M.D., Mystic, Iowa, to Miss Edna Bracewell of Allerton, Iowa, July 2.

Fred B. Kyger, M.D., Kansas City, Mo., to Miss Lucile Hutcheson, at Kansas City, June 14.

Jesse Thomas Nugent, M.D., Tulip, Mo., to Miss Anna Harris, in Centralia, Mo., recently.

Cabot Lull, M.D., to Miss Dorothy Maude Eaves, both of Birmingham, Ala., June 25.

Deaths

Benjamin Lee, M.D. New York Medical College, New York City, 1856; one of the best known sanitary officials of the United States and for twenty-eight years an officer of the State Health Service of Pennsylvania; died at Point Pleasant, N. J., July 11, aged 79. Dr. Lee was a native of Norwich, Conn., received his preliminary education at the Academy of the Protestant Episcopal Church, Philadelphia, was graduated with the degree of A.B. from the University of Pennsylvania in 1852, receiving the Master's degree in 1855, and that of Ph.D. in 1878 from that institution. After two years of study abroad he returned to New York City and seven years later removed to Philadelphia. He was attending physician in the Department of Diseases of Women in Demilt Dispensary, New York, in 1859 and 1860 and professor of orthopedics in the Philadelphia Polyclinic and College for Graduates in Medicine in 1892 and 1893. He became assistant surgeon of the Twenty-Second Infantry, New York National Guard, in 1861, was promoted to surgeon in 1862 and served in that capacity and as acting brigade surgeon during the Civil War. In 1885 Dr. Lee was appointed a member of the Pennsylvania State Board of Health and was elected secretary of the board, continuing in that position until it was superseded by the Department of Health in 1905 when he became assistant to the Commissioner of Health of Pennsylvania. From 1893 to 1905 he was secretary of the State Quarantine Board and in 1889 supervised the sanitary and medical service in and about Johnstown after the flood. In the same year he was appointed United States commissioner for condemnation of land for quarantine purposes at the mouth of Delaware Bay, and in 1891 Governor Beaver appointed him a member of the quarantine commission to select a site for a new station on Delaware River or Bay. During 1898 and 1899 he served as health officer of the city and port of Philadelphia. He made frequent contributions to medical literature and his society membership included many medical and sanitary associations at home and abroad. He had served as president of the American Academy of Medicine, National Conference of State Boards of Health, American Public Health Association, American Orthopedic Association and Aid Association of the Philadelphia County Medical Society.

Alden M. Gardner, M.D. Missouri Medical College, St. Louis, 1877; formerly professor of nervous diseases and medical jurisprudence in Cooper Medical College, San Francisco, and superintendent of the Napa California State Hospital; physician in charge of the Gardner Sanitarium, Belmont, Cal.; died in that institution, June 28, from nervous breakdown, aged 63.

Will C. Washburn, M.D. Cincinnati College of Medicine and Surgery, 1897; a member of the Ohio State Medical Association; founder of the night schools of Cincinnati and of the Glenairy School for the Training of Defective Children; principal of the eleventh district public school of Cincinnati; died at his home, June 24, from nephritis, aged 61.

Durus Dennis Carter, M.D. Jefferson Medical College, 1868; a member of the Medical Society of Virginia; first president of the Shenandoah Valley Medical Society; a member of the Board of Health of Shenandoah County and county physician; died at his home in Woodstock, June 21, from acute nephritis, aged 66.

Hugh Scott, M.D. University of Edinburgh, Scotland, 1859; for twenty-six years a practitioner of Chicago and for four years a member of the Board of Health; said to have been one of the founders of the first training school for nurses in Chicago; died at his home in Fond du Lac, Wis., July 11, aged 81.

Charles Plummer Morrill, M.D. Georgetown University, Washington, D. C., 1866; a member of the Massachusetts Medical Society; a veteran of the Civil War; a member of the school committee of North Andover, Mass., for twenty-five years; died at his home in that place, June 27, aged 73.

Wallace B. Deffenbaugh, M.D. Starling Medical College, Columbus, Ohio, 1885; a fellow of the American Medical Association; professor of obstetrics in Ensworth Medical College, St. Joseph, Mo.; for two terms city physiciaan; died in his office, July 2, from cerebral hemorrhage, aged 53.

Solomon Lucius Wynne, M.D. Memphis (Tenn.) Medical College, 1860; a member of the Mississippi State Medical Association; surgeon in the Confederate service throughout the Civil War; health officer of Tate County, Miss.; died at his home in Senatobia, June 26, aged 90.

Louis C. Neele, M.D. Medical College of Virginia, Richmond, 1857; a practitioner of Saline County, Mo., since the close of the Civil War; died at his farm near Sweet Springs, Mo., June 25, from senility and a fracture of the forearm, the result of a fall, aged 82.

Pride Jones Thomas, M.D. University of Maryland, Baltimore, 1902; a member of the Medical Society of the State of North Carolina; assistant surgeon of the Atlantic Coast Line at Wilmington; died at his home, June 24, from valvular heart disease, aged 38.

Isidore Clarence Smullyan, M.D. Baltimore Medical College, 1901; for five years a practitioner of Salt Lake City, Utah; a member of the State Board of Medical Examiners; died in the Holy Cross Hospital, Salt Lake City, June 30, from nephritis, aged 35.

Samuel J. Waggaman, M.D. Washington University School of Medicine. Baltimore, 1869; one of the founders of the National College of Pharmacy; a Confederate veteran; died at his home in Washington, D. C., May 30, from arteriosclerosis, aged 69.

George Joseph Gorman, M.D. New York University, New York City, 1891; connected with the New York Board of Health for more than twenty years; died in his apartment in New York City, June 27, from cerebral hemorrhage, aged 59.

William Henry McFadden. M.D. Pennsylvania Medical College, Gettysburg, 1852; chief engineer of the Philadelphia Water Bureau and later connected with the Camden (N. J.) Gas Works; died at his home in Philadelphia, July 2, aged 85.

Charles George Bull, M.D. Bellevue Hospital Medical College, 1881; a fellow of the American Medical Association; a well known surgeon of Alameda, Cal.; died at Greeneville, Cal., June 21, from valvular heart disease, aged 54.

Orville L. Helwig, M.D. Kansas City Medical College, Kansas City, Mo., 1896; slipped and fell in a bathroom in his hospital in Garden City, Kan., June 22, sustaining injuries from which he died a few hours later, aged 44.

Samuel Herbert Britton, M.D. Western Reserve University, Cleveland, 1884; formerly a member of the American Medical Association; died at his home in Marion, Ohio, June 28, from nephritis, aged 53.

John W. Hemsted, M.D. University of Iowa, Iowa City, 1873; formerly mayor and a member of the school board of Carson, Iowa; died at the home of his daughter in Saskatoon, Sask., June 19, aged 65.

Sidney B. Johnson, M.D. University of Nashville, Tenn., 1857; a Confederate veteran and a resident of Bowling Green, Ky., since 1876; died at his home, June 23, from cerebral hemorrhage, aged 77.

John Fletcher, M.D. Michigan College of Medicine and Surgery. Detroit, 1897; formerly a member of the American Medical Association; died at his home in Kalamazoo, Mich., about June 24, aged 60.

Edward Parry, M.D. Medico-Chirurgical College of Philadelphia, 1903; formerly a member of the American Medical Association; died at his home in Camden, N. J., about June 15, aged 46.

Colin M. Robertson, M.D. Missouri Medical College, St. Louis, 1857; for more than half a century a practitioner of Menard County, Ill.; died at his home in Tallula, June 14, aged 92.

Frederick J. Nicholson, M.D. Hahnemann Medical College, 1907; of Walworth, Wis.; was instantly killed in an automobile accident near Lake Geneva, Wis., July 1, aged 29.

George S. Murphy, M.D. University of Southern California, Los Angeles, 1891; for twenty years a practitioner of San Diego, Cal.; died at his home, June 30, aged 58.

John W. Sanders, M.D. Medical College of Indiana, Indianapolis, 1883; at one time superintendent of health of Lawton, Ark.: died at his home in that city, June 28.

Jessee M. Armfield (license, Arkansas, 1903); a practitioner for thirty-nine years; died at his home in Mena, June 28, from malignant disease, aged 66.

Adam Rupin, M.D. Homeopathic Medical College of Missouri, St. Louis. 1878; died at his home in Topeka, Kan., July 1, from cerebral hemorrhage, aged 75.

Peter H. Van Vleck, M.D. Homeopathic Medical College of Missouri, St. Louis, 1865; died at his home in Sturgis, Mich., April 10, aged 75.

James R. Taylor, M.D. College of Physicians and Surgeons, Baltimore. 1881; died at his home in Marietta, Ohio, about June 27, aged 63.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

CONVICTIONS UNDER THE FOOD AND DRUGS ACT

DENTON'S HEALING BALSAM

In May, 1911, two seizures were made of three dozen packages and six dozen packages, respectively, of this article, shipped by Hall and Ruckel, New York City, to Detroit. The labels on the bottles and the circulars wrapped round the bottles made such claims as:

> "Will cure coughs and colds, heals the lungs, inflammation on the lungs."
>
> "Will cure the Phthisic, Lame Back, Gravel and Kidney complaints."
>
> "It will cure flesh wounds . . . on man or beast."
>
> "It prevents contagious diseases, it cures heaves . . ."

The chemists of the Bureau of Chemistry reported that their examination indicated that the stuff was simply Canada balsam. Misbranding was alleged because of the misleading and deceptive claims. As no claimant appeared for the property, both lots were condemned and ordered to be destroyed by the United States marshal.—[*Notices of Judgment Nos. 1464 and 1465. Issued May 22, 1912.*]

ALLAN'S COMPOUND EXTRACT OF DAMIANA

In 1910 the Allan-Pfeiffer Chemical Company, St. Louis, shipped from Missouri to Illinois a product labeled: "Allan's Compound Extract of Damiana, with Saw Palmetto, Alcohol 27½ per cent." Some of the claims made for this stuff were:

> "The Great Sexual Tonic Nerve and Brain Remedy."
>
> "For Lost Manhood . . . Weak Memory, Exhausted Vitality, Errors of Youth."

While the name and description of the preparation gave the purchaser the impression that it consisted essentially of extract of damiana with saw palmetto, the government chemists reported that "in fact it consisted of numerous other ingredients and substances." Moreover, although it was so labeled as to convey the impression that it was a sexual tonic and possessed aphrodisiac properties, it had, said the chemists, "no such properties." It was therefore declared misbranded on both counts. In March, 1912, the company pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 1560. Issued Aug. 21, 1912.*]

HAMBURG STOMACH BITTERS

In May, 1912, the Weideman Co. of Cleveland was charged with shipping in 1910 from Ohio to Missouri a quantity of bitters which were misbranded. The product was labeled:

> "Hamburg Stomach Bitters . . . 35 per cent. Alcoholic strength . . ."

A sample was analyzed by the Bureau of Chemistry and the chemists reported that the product "consisted of a sweetened water and alcoholic liquor flavored with a small amount of flavoring material and colored with caramel." Misbranding was alleged because of excess of alcohol above amount acknowledged on the label, and because the name "Hamburg," on the label, gave the impression that the stuff was of foreign manufacture, which it was not. The company pleaded *nolo contendere* and the court, while assessing fines in other, and simultaneous, cases of violation of the act, to which the company pleaded guilty, seems to have relieved them of any punishment for this offense.—[*Notice of Judgment No. 2094. Issued March 27, 1913.*]

DR. BENNETT'S WONDER OIL

In April, 1910, L. R. Bennett, who traded as the Bennett Medical Company, Norfolk, Va., shipped from Virginia to the

District of Columbia a quantity of Dr. Bennett's Wonder Oil. The claims made on the labels read:

> "Good for rheumatism, neuralgia, headache, earache, dizziness, sprains, toothache, bruises, chilblains, cuts, frosted feet, burns, sore throat, pleurisy, colic pains, catarrh, deafness, cholera morbus, diarrhea, cramps, dysentery, scalds, etc."

Analysis by the federal chemists is reported to have shown that the article contained alcohol (46.3 per cent.), chloroform and morphin. Since the presence of none of these ingredients was declared on the label, although required by the Food and Drugs Act, the product was declared misbranded. In June, 1911, Bennett pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 2106. Issued March 27, 1913.*]

PALE ORANGE BITTERS

In September, 1910, the Bettman-Johnson Company of Cincinnati shipped from Ohio to Texas a product labelled "Pale Orange Bitters," which was misbranded. The label read:

> "A Wholesome Tonic. Superior Quality . . . These Bitters are guaranteed to be made under the most approved process of the best materials."

A sample was analyzed in the Bureau of Chemistry and the chemists reported that it contained "alcohol, by volume, 32 per cent., colored with caramel." Misbranding was alleged for the reason that no statement appeared on the label of the quantity or proportion of alcohol contained in the product. In November, 1912, the defendant entered a plea of *nolo contendere* and was fined $25 and $14.30 costs.—[*Notice of Judgment No. 2199. Issued April 16, 1913.*]

CASOID FLOUR—A CORRECTION

In an article by Mr. J. P. Street on "Diabetic Foods Offered for Sale in the United States" that appeared in The Journal, June 28, 1913, it was said that Casoid Flour contained 2.2 per cent. carbohydrates. Attention has been called to the fact that this statement is at variance with the description of Casoid Flour in New and Nonofficial Remedies, which declares that the product contains neither sugar nor starch. The matter was taken up with the Secretary of the Council on Pharmacy and Chemistry who in turn made inquiry of Mr. Street regarding the apparent discrepancy At the same time a specimen of Casoid Flour was purchased in the open market and submitted to the chemists of the Association's laboratory for examination.

The Secretary of the Council on Pharmacy and Chemistry reports as follows regarding the correspondence with Mr. Street and the result of the laboratory's investigation:

"In reply, after explaining that in the full report soon to be published it will be made plain that Casoid Flour does not contain starch, Mr. Street continues:

> . . . by the omission of some paragraphs that appear in the full report explanatory of my tables, some misconception might arise as to the true carbohydrate content of certain of the diabetic foods. In the full report I state that, for the sake of uniformity, the protein has been calculated by means of the conventional factor, 6.25, and that for this reason the protein percentages of the wheat products as given in the tables are too high, and those for nitrogen-free extract are correspondingly too low. I also say: "On the other hand in a preparation like Casoid Flour, consisting in large part of casein, the use of the proper factor 6.37, instead of 6.25, would increase the protein 1.64 per cent. and correspondingly decrease the carbohydrates. The use of the conventional factor in such a substance as this does it a slight injustice, as it is practically free from carbohydrates."

"Casoid Flour at the time of its acceptance for inclusion with New and Nonofficial Remedies (The Journal A. M. A., Nov. 2, 1912, p. 1622) was free from sugar and starch. Similarly, the product purchased in Chicago, July 7, 1913, when examined in the Association laboratory, was found to be free from starch and sugar."

Vital Statistics and Sanitary Administration.—Whenever statistics are wanting, sanitary administration is defective. Whenever they are complete, sanitary administration is efficient. Defective vital statistics and low ideals of cleanliness and health go hand in hand.—William H. Allen.

Correspondence

Unfair Demands on Physicians by Insurance Companies

To the Editor:—I wish to call attention to an injustice that, to my mind, is being imposed on physicians. The numerous health and accident companies insist on proof from the physician as to the disability of the insured, but they refuse to pay him for it, although it is manifestly for their protection, I presume that every physician is willing to furnish to the insured a simple statement, which can be dictated to a stenographer in a few minutes, as to the length and nature of the disability, but these companies insist on the physician's filling out answers to a long list of questions.

A few years ago the list was headed with the request, "the physician will *please* fill in the answers to the following questions." Emboldened by the complaisance of the physicians, most of these companies now head the blank with "the physician *must* furnish correct answers to the following questions," though the reason for the imperative *must* as coming from the company, is not apparent to the ordinary observer. If the company paid the physician for the information that is so manifestly for its protection, it might properly insist on the correct filling of its blank, but, until it does, it would seem that ordinary politeness would suggest the word "please" instead of "must." Formerly the company sent the blank around by the insured, but recently the agent of the company comes around with all the assurance in the world and demands that the physician spend thirty or forty minutes in properly filling out his blank. Some of these companies have inserted this question in their blank, "What was your treatment?" I have always answered this question as follows: "This question is impertinent and the answer is no concern of yours." No company has asked for any further information. When a physician is employed by the insured he is responsible to the insured only for treatment, and not to an insurance company that imposes on him enough by trying to get for nothing information for its protection. Some companies add insult to injury by requiring a sworn statement, so that the physician must not only take up his time by filling the long blank, but he must also hunt up an officer to swear him.

It speaks well for the integrity of physicians as a class that these companies have been able so long to get correct information for their protection at no cost to themselves.

Clifford U. Collins, M.D., Peoria, Ill.

Vaccination for Autumnal Hay-Fever

To the Editor:—The hay-fever season being just at hand, I should like to urge physicians and sufferers to experiment with pollen vaccine and publish their results. Various suggestions in this line have been made but I have seen no definite and hopeful work till that editorially commented on in The Journal, June 7. A personal experience leads to this letter. Two years ago I collected some ragweed pollen and placed 1 dram in 1 ounce of glycerol (glycerin). After reading your editorial I gound the pollen and glycerol and filtered, washing the residue to make 2 ounces, and adding phenol (carbolic acid) to 0.5 per cent. My son being a hay-fever subject, I washed his arm with ether, placed a small platinum loopful of the vaccine on it and made a minute scratch not to exceed ⅛ inch through it with a similar scratch for control at a distance of 2 inches. The excess of reaction at the vaccinated spot was almost negligible. Three days later, to test the possibility of the increase of sensitiveness, the experiment was repeated in the same way. Within five minutes a weal was present ⅜ inch in diameter, and surrounded by a congested and infiltrated area 1½ inches in diameter and with the sharp sensation of a mosquito-bite. As a further control I asked my friend Dr. L. L. Ten Broeck to apply the test to my own arm. He did so but with from five to ten times the amount of scarification. The result was absolutely nil. A test three days later was equally without result.

Making 1:1,000 and 1:1,000,000 dilutions it is perfectly easy to make and use this vaccine and with such beginning doses as are entirely safe. If the thousands of physicians who have hay-fever patients would take the comparatively little trouble of carrying out such a technic as I have described, or a better one, and make vaccinal injections as suggested in your editorial, great results might be secured in a single season in determining the value of such treatment. The pollen is ready.

Edward J. Brown, M.D., Minneapolis.

Criticism of Editorial on Oxaluria

To the Editor:—I take exception to the statement in the editorial on "Oxaluria" in The Journal, June 21, 1913, p. 1959, that "we believe that it is a tenable conclusion to say that the only conspicuous significance of the oxalates at present is to be found in their tendency to form sediment or concretions." In my experience, numerous oxalate of lime crystals in the urine are accompanied by symptoms of headache, irritability, depression, lassitude, insomnia and dyspepsia. Not all may be present in every case, but one or more usually is. Insomnia that does not yield to the numerous hypnotics often yields to correction of oxaluria. At this season tomatoes, rhubarb and strawberries may cause oxaluria, and "tomato-joint" is a well-recognized clinical entity. Cure is effected by administration of the strong nitrohydrochloric acid, 7 drops after each meal in a full glass of water, taken through a glass tube and followed by an alkaline mouthwash or tooth-powder to protect the enamel of the teeth.

P. G. Skillern, Jr., M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FUNCTIONS OF THE PINEAL GLAND

To the Editor:—In The Journal, June 7, 1913, under Current Medical Literature, you give an abstract from *Beiträge zur klinischen Chirurgie*, Tübingen, for April, entitled "Zur Pathologie und Operabilität der Tumoren der Zirbeldrüse," by Rorschach and translated "Tumors of the Pineal Gland." As the symptoms of tumor of the pineal gland as given in the abstract are so like those, if I remember correctly, given by Dr. Cushing in lecturing on the pituitary body at the Harvard Medical School, it has occurred to me that the pituitary body might be the gland in question rather than the pineal gland. Unfortunately there is at hand no available dictionary of German medical terms in which to look up "Zirbeldrüse," so I cannot tell whether or not the translation has anything to do with the question.

As the pineal body or gland is treated in Starling's "Physiology" (Lea & Febiger, 1912 edition) as follows, it is very interesting if the article abstracted really refers to it. Starling says: "The pineal gland has, so far as we know, no function in metabolism. It is interesting as a vestigial remnant of a primitive dorsal eye. . . . It is doubtful whether at any time in the history of vertebrates the pineacl eye has been functional." In view of this statement and Dr. Cushing's findings that overdevelopment of the skeleton and sexual characteristics and obesity are the two phases of overactivity and underactivity of the pituitary body, it seems as if the latter might be the subject of this article rather than the pineal gland. Kindly enlighten me on this matter.

Howard E. Settle, Berne, N. Y.

Answer.—As to the translation there is no question; the word *Zirbeldrüse* means pineal gland. The investigations of the functions of the pineal gland have yielded the following as probable: An interference with the metabolism of fat is often found in connection with pathologic states of the pineal body, the preponderance of evidence indicating that obesity is connected with a hypofunction of the gland. The changes due to disturbance of this function take place in young subjects, principally boys under 7 years of age and consist in abnormal tallness, unwonted growth of the hair, premature sexual and mental development and early maturity. These changes usually are associated with symptoms of brain tumor and seem to depend in most cases on a destructive lesion or growth of the pineal body.

It is evident that these changes are similar to those that have been observed in affections of the pituitary body.

OBLITERATION OF WRINKLES BY SUBCUTANEOUS INJECTIONS

To the Editor:—1. Kindly refer me to literature and publish formulas for subcutaneous injections to obliterate wrinkles. 2. What is the principal danger of this practice? 3. Given a case in which a man has received this treatment of the face and has had to have the face lanced twice and the area curetted owing to an increasing hard mass forming at site of injection, what is the diagnosis of the local condition present? 4. What animal fats are used and how are they prepared?

E. N. H.

Answer.—This method is treated in various text-books on surgery. The method consists in the injection, under aseptic precautions, of melted paraffin, having a melting-point of from 41 to 44 C. or 105 to 110 F. Only enough should be injected to distend the tissue moderately. The following literature may be consulted:

Davis, A. E.: A Protest Against the Employment of Paraffin Injections Near the Eyes, The Journal, July 20, 1907, p. 215.
Smith, Harmon: Paraffin Injected Subcutaneously for the Correction of Nasal and Other Deformities, The Journal, Sept. 26, 1903, p. 773.
Roberts, John B., A.M., M.D.: Surgery of Deformities of the Face, published by William Wood & Co., New York.

2. If asepsis is imperfect the injected paraffin may act as a foreign body and produce an abscess. It may also cause the formation of a fibroma which has received the special name of paraffinoma. Embolism has occurred from some of the paraffin entering a blood-vessel. This has occasionally reached the eye producing blindness.

3. The local condition present, in the case described, is probably paraffinoma. Paraffinoma is a fibrous tumor produced in consequence of the irritation set up by the paraffin injected. The only effectual treatment is removal of the paraffin, and that is not altogether satisfactory because the paraffin is in threads and worm-like masses in the tissue and is difficult to dislodge. See the following:

Erythema Following Paraffin Injection, Queries and Minor Notes, The Journal, Nov. 16, 1912, p. 1812.
Heidingsfeld, M. L.: A Further Contribution to the Histopathology of Paraffin Prosthesis, The Journal, Dec. 12, 1908, p. 2028.
Pusey, W. A.: The Principles and Practice of Dermatology, p. 865.

4. Animal fats are not used in this method. Paraffin is a mixture of solid hydrocarbons and not a fat in the chemical sense.

THIALION

To the Editor:—Please give the formula of the much-lauded uric acid preparation "Thialion," manufactured by the Vass Chemical Company, Danbury, Conn.

E. Trible Gatewood, M.D., Toano, Va.

Answer.—In the "literature" supplied to physicians and in advertisements in medical journals, Thialion was stated to be "a laxative salt of lithia" with the chemical formula "$3Li_2O.NaO.SO_3.7HO$," and the synonym "sodio-trilithic anhydrosulphate." An elaborate, impossible structural formula was also supplied. An investigation proved it to be a mixture consisting, approximately, of:

Sodium citrate	58.6
Sodium sulphate, anhydrous	26.6
Sodium chlorid	3.3
Lithium citrate, anhydrous	1.8
Water	9.7

The report of the Council on Pharmacy and Chemistry on this stuff appears in the seventh edition of "The Propaganda for Reform."

ARTICLES ON DISPENSARY ABUSE

To the Editor:—Please give me a list of articles on dispensary abuse.

Michael M. Davis, Jr., Boston.

Answer.—The following may be consulted:

Warner, A. R.: Dispensary Abuse and its Elimination by Organization and the Application of Sociologic Methods, The Journal, March 8, 1913, p. 739; Sources of Dispensary Abuse, *Cleveland Med. Jour.*, October, 1911.

Anders, Howard S.: Report of Committee on Hospital Dispensary Abuse, abstr., THE JOURNAL, Jan. 6, 1912, p. 59.
Foster, E. C.: Charities Clearing-House, in Its Relation to Dispensary and Hospital Abuse, *Cleveland Med. Jour.*, October, 1911.
Gerstenberger, H. J.: Dispensary Abuse, *Cleveland Med. Jour.*, October, 1911.
Herrick, F. C.: Dispensary Practice with Suggestions for Its Control, *Cleveland Med. Jour.*, October, 1911.
The Problems of Medical Charity, *Bull. Chicago Med. Soc.*, Nov. 26, 1910.
Gay, George W.: Abuse of Medical Charity, *Boston Med. and Surg. Jour.*, March 16, 1905.

SUGGESTION FOR USE OF SANITARY NAPKINS

To the Editor:—It has often occurred to me that if a properly shaped piece of rather heavy paper—a sanitary napkin, if you please—could be provided for the protection of one's person from contact with a water-closet seat it would be a welcome safeguard. These sanitary napkins could be regularly provided along with the toilet-paper and kept right by the seat, just as ordinary toilet-paper is.

Will you kindly make the suggestion to some maker of sanitary toilet paper?

J. W. H.

ANSWER.—Some manufacturers of sanitary towels and toilet-paper are already supplying napkins such as our correspondent suggests. These are distributed by means of a slot machine.

IRRIGATION OF LOWER BOWEL IN TYPHOID

To the Editor:—Is the irrigation of the lower bowel for the reduction of temperature in typhoid fever, etc., good treatment?

F. L. A.

ANSWER.—This method has been used to some extent, but we see no reason why it should be used in preference to the cold bath.

Irrigation of the lower bowel by cold enema is sometimes employed, and if the quantity of fluid used is not large there is no contra-indication to this procedure. It must be remembered, however, that cold enemas are complementary to some other forms of antipyretic treatment—spongings, packings or baths—and can seldom be depended on to control the temperature.

TREATMENT FOR LAMBLIA INTESTINALIS

To the Editor:—Kindly give me the proper treatment for *Cercomonas intestinalis* or *Lamblia intestinalis*.

GUY S. PEPPERS, M.D., Titusville, Fla.

ANSWER.—Castellani's methylene-blue treatment is said to give the best results. A dose of 0.13 gm. or 2 grains is given three times daily. At the same time enemas consisting of a solution of the drug, 1:3,000, are administered. Care should be taken to avoid the transmission of the infection, and rest in bed with appropriate general treatment is essential.

LITERATURE ON MERCURY OXYCYANID

To the Editor:—Please give literature on oxycyanate of mercury, its composition, dosage, etc.

F. E. WHITNEY, M.D., Rochester, N. H.

ANSWER.—Our correspondent probably means mercury oxycyanid. This substance is described in N. N. R., p. 156. We also made reference to it in THE JOURNAL, Feb. 25, 1911, p. 609. Besides this we find no literature on the subject.

OPERATING DURING MENSTRUAL PERIOD

To the Editor:—Is menstruation a contra-indication to an operation for acute appendicitis within the first twenty-four hours; also, in other urgent operations of the abdominal cavity?

H. A. HOTTENDORF.

ANSWER.—No. In any case of urgency the presence of menstruation should not be regarded as a contra-indication to an operation.

PAPER MONEY AS A DISEASE CARRIER

To the Editor:—Is there any literature bearing on the subject of the possibility of the transference of disease through the medium of paper money? Do you know of any bacteriologic examinations having been made of ordinary circulating paper money? X. Y. Z.

ANSWER.—The subject was discussed in the *Popular Science Monthly*, August, 1908, by W. W. Hilditch, and again in the same journal by A. C. Morrison, January, 1910.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

THE NEW CALIFORNIA MEDICAL PRACTICE ACT

This law, which is to take the place of the present medical practice act of California, would seem to be the first measure of its kind providing for a single board, authorized to issue two grades of certificates. Apparently such a law should meet all the objections of the so-called "drugless healers," including even the Christian Scientists, for it is provided that "this act shall not be construed so as to discriminate against any . . . treatment, nor to regulate, prohibit, or apply to, any kind of treatment by prayer, nor to interfere in any way with the practice of religion."

The law creates and establishes a state board of medical examiners, consisting of ten members, appointed by the governor. Each appointee must establish a citizenship of at least five years' standing next preceding his appointment, and "each of the members shall be appointed from among persons who hold licenses under any of the medical practice acts of this state." Thus the membership can be made up from any school, or schools, that the governor may determine.

The board must hold at least one regular meeting a year in Sacramento, and at least two additional meetings annually, one each in Los Angeles and San Francisco.

Due notice of all these meetings, and of the examinations as well, must be published twice a week for two weeks next preceding such meeting, or examination, in some daily paper of each of the three cities mentioned.

All applications for examinations must be made through the secretary of the board, to whom the prescribed fee and the necessary credentials as well, must be sent.

The board must compile an annual directory, containing:

1. The names of all persons holding unrevoked licenses to practice in California, and residence.
2. The names of the medical schools each attended.
3. The date of licensure and the form of certificate issued to each practitioner.

This directory is to be made presumptive evidence of the right of any person to practice in California. The affirmative vote of seven members of the board is necessary to authorize the adoption of a rule or resolution and the issuance of a certificate to any applicant. Under this law three forms of certificates may in the discretion of the board be issued:

1. A "physician and surgeon" certificate. The holder thereof may use any method or system of treatment that the case may demand.
2. A "drugless practitioner" certificate. The holder is limited to the so-called drugless system of healing; he may sever the umbilical cord.
3. Reciprocity certificate, issued to applicants from a foreign state who are already licensed to practice as a physician and surgeon in their own state. The license permits them to practice as a physician and surgeon in California.

Applicants for either of the first two forms of certificates must advance a $25 fee; file satisfactory evidences of good moral character, and file a diploma showing attendance at and graduation from some approved medical school. An applicant for a physician and surgeon certificate must show an attendance of 128 weeks and credits amounting to not less than 4,800 hours; an applicant for a drugless practitioner certificate must show an attendance of sixty-four weeks and credits amounting to not less than 2,400 hours; prove a satisfactory preliminary school education; and after Jan. 1, 1919, an applicant for a physician and surgeon certificate must show at least one year of college work in physics, chemistry and biology prior to having commenced the study of medicine.

All applicants for certificates must submit to an examination in the usual fundamentals, it being provided, however, that applicants for a drugless practitioner certificate may be excused from examination in materia medica, therapeutics, surgery and the like. If, however, the holder of a drugless practitioner certificate completes the course for the physician and surgeon certificate, he may be examined in the remaining subjects and receive the regular certificate.

A general average of 75 per cent. on the entire examination and not less than 60 per cent. in any two subjects is required for passing.

For each year of actual experience since graduation, any applicant will be granted 1 per cent. on his general average.

All certificates must state the extent and character of practice to be permitted thereunder.

Any medical director, inspector, passed assistant surgeon, or assistant surgeon of the United States Navy, and any similar medical official of the United States Army, who has been honorably discharged, ordered on detached service, placed on the retired list or has resigned under honorable circumstances can practice in California on submitting to the secretary of the board a copy of the order discharging him, etc., or proof thereof satisfactory to the board, with a fee of $50.

This provision does not apply to any contract surgeon in the Army or Navy, or to any similar physician or surgeon with the medical reserve corps.

It is mandatory on the board to issue a "physician and surgeon certificate" to any applicant without an examination, authorizing the holder to practice "medicine and surgery" in California, provided that such applicant was licensed to practice "medicine and surgery" in any state or territory of the United States or in the District of Columbia subsequent to the first day of August, 1901, and said applicant must show that the requirements, etc., in the state in which he was licensed were equal to those of California at the time the license was issued, else he must submit to an examination. The board can use its discretion in passing on the credentials of the applicant.

Any person may file an application to practice "medicine and surgery" in California who was licensed to practice and has practiced "medicine and surgery" in some state or territory or the District of Columbia prior to Aug. 1, 1901; but he must submit to an oral examination after having submitted proof as to his moral standing and mental ability and any other reasonable information the board may require. The board may make an investigation on its own initiative if such be deemed necessary.

No reciprocity certificate shall issue except on a majority vote of the board.

All applicants for a reciprocity certificate must advance a fee of $50, of which $40 will be returned on demand by the applicant if he be rejected.

All such certificates issued must be plainly marked across the face "Reciprocity Certificate."

It is mandatory on the board of medical examiners to refuse a certificate to any applicant charged with and found guilty of unprofessional conduct.

It is likewise mandatory on the board to use its discretion to suspend or revoke the license of any physician found guilty of a similar charge.

There may be a revocation of a license for fraud or mistake in its procurance, or for practicing contrary to the provisions of the law. A license may not be suspended to exceed one year, and during such period of suspension the licensee shall not practice. For a violation of this injunction a revocation shall be suffered, otherwise the license will revest at the expiration of the year.

Unprofessional conduct is defined as:

1. Procuring or aiding or abetting in procuring a criminal abortion.
2. Wilfully betraying a professional secret.
3. Advertising with intent to deceive credulous or ignorant persons and so be harmful or injurious to public morals or safety.
4. Advertising any medicine to regulate the monthly periods of women or to reestablish the menses if suppressed.
5. A conviction for any offense involving moral turpitude, in which case the record of such conviction shall be conclusive evidence.
6. Habitual intemperance.
7. Personating some other licensed practitioner.
8. Using a fictitious name or any other name than rightful name in advertising, etc., by the holder of a certificate.
9. Use, by the holder of a limited certificate, of drugs, or the performance of a surgical operation except the severance of the umbilical cord.
10. Advertising to cure venereal diseases or any sexual disease, or disorder by a firm, partnership, etc., or being in the employ of any one, etc., so advertising.
11. Use, by the holder of a limited certificate, of the letters "M.D." or words "doctor of medicine," or term "physician and surgeon," etc., in connection with his name, etc., on a card, etc.

The statute makes careful provision for the use of proper procedure in the trial of any one charged with unprofessional conduct. It is provided that due notice must be given the accused of the charge and of the day set for trial, and such person may be defaulted only if he fail to appear and defend, as the law prescribed and if the complaint on its face be sufficient. The board is given full power to subpoena witnesses, and hear testimony, either direct or by deposition; and its process is to be enforced by contempt proceedings in the superior court of the proper county.

No provision is made for an appeal from the judgment of the board; but the law provides that the register of the suspension or revocation kept by the county clerk of the proper county shall be prima-facie evidence as to such fact and as to the regularity of the proceedings. Thus, should an appeal be taken by any one deeming himself aggrieved, the burden of proof would rest with the appellant to establish facts sufficient to overturn the judgment of the board.

It is provided that licensees must record their certificates in the county or counties in which they intend to practice—a penalty being attached for a failure to do so.

Practicing without a license is a misdemeanor, and any person so doing is liable to a fine of from $100 to $600 or to imprisonment, etc.

Various other acts are constituted either a misdemeanor or a felony and proper punishment is provided.

Any person licensed under any previous law of California may practice under the present law without being licensed thereunder. But the holder of such a certificate shall be amenable to the present law in matters of revocation of license and the like.

The law makes the usual exemptions, such as the application of domestic remedies, a licensed physician from another state called in consultation, medical officer in the United States Army and the like. The act is not to be construed against any particular school; nor does it regulate, prohibit or apply to any kind of treatment by prayer, nor does it interfere in any way with the practice of any religion.

Medical Education and State Boards of Registration

The New Medical Department of the University of Georgia

Among the medical schools of the United States which in the past few years have undergone development special mention should be made of the medical department of the University of Georgia. Aside from its history showing it to be one of the oldest medical schools in the country, this school had very little to commend it at the time the Council on Medical Education made its first inspection in March, 1907. It held at that time only a contractual relationship with the University of Georgia, had no full-time teachers, held to a merely nominal standard of entrance requirements and had access to a very limited amount of clinical material. Stimulated by the reports on medical education from the Council on Medical Education and the Carnegie Foundation which came out in 1910, a decided trend toward improvement was begun. A lease was secured on a 45-acre tract of ground on which was located a large building previously occupied as an orphan asylum. A campaign for financial support resulted in securing subscriptions from the citizens of Augusta amounting to $45,000 to be used for remodeling the orphan asylum building, which the medical college is now occupying, and for the purchase of additional laboratory equipment.

A contract was entered into with the city of Augusta providing for the erection of a new city hospital to be located on the campus of the medical school and providing that the medical school have entire control of the clinical facilities. It also provided for an appropriation of $10,000 per year in perpetuity for the medical school; this in addition to the amount necessary for maintaining the hospital. Another contract was entered into with the city whereby for ten years the medical school was given entire charge of the visiting nurses, city physicians, the sick poor of the city and the laboratory work of the city board of health, for the expense of which the city has made an additional annual appropriation of $11,500. Through these two contracts, therefore, all of the medical work of the city of Augusta has been placed under the charge of the faculty of the medical school, and the city pays the bills. The medical school not only controls the appointment of those who are to do the work, but also can systematize and make use of all the clinical material in the city. Meanwhile, this arrangement is unique in that the work of visiting nurses, city physicians, out-patient service, city board of health and city hospital is entirely removed from politics and placed in charge of what now has every promise of being a strong medical school. This will undoubtedly guarantee for the sick poor of Augusta and for the local health work the best possible attention.

After the local advantages mentioned above had been obtained, legislation was also secured making this school an organic department of the University of Georgia. The laboratories have been better equipped, additional laboratories have been opened, expert full-time teachers were carefully selected and placed in charge of all laboratory branches, the curriculum was strictly graded and a gradual increase in the entrance requirements was decided on. For the session of 1911-1912, fourteen units of high-school work were required, although students were allowed to enter with conditions. For the session of 1912-1913, fourteen units of high-school work without conditions were insisted on. The college has now announced that after Jan. 1, 1914, two years of work equal to that given in the freshman and sophomore years of the liberal arts department of the University of Georgia will be required, and a combined course has been arranged by the university whereby the degrees of B.S. and M.D. may be secured in six years. The college has also carefully systematized the clinical work of the students in the local dispensaries and hospitals. The medical library and the museum also are being rapidly developed. Following a thorough inspection, and in recognition of the improvements made, the college has been rated in Class A by the Council on Medical Education.

Better Knowledge of Cancer Desired

At the annual meeting of the American Association for Cancer Research May 5, 1913, the following resolution (the report of the Committee on Statistics and Public Education) was unanimously adopted:

It is the sentiment of this association that: 1. The present instruction of medical students in the symptoms and early diagnosis of cancer is seriously deficient. 2. The medical curriculum should include special lectures in the clinical departments dealing specifically with this subject. 3. The universities should provide competent lecturers in this subject to address the local medical societies. 4. The associate members of the association should be urged to take up the question of the proper methods of approaching the public on the subject of cancer. 5. The activities of this association should at present be chiefly confined to the education of the medical profession. 6. This resolution shall be sent to the deans of the medical schools and the secretaries of the state medical societies in the United States and published in the medical press.

Adopt Higher Requirements

Howard University has announced that beginning with the session of 1914 the entrance requirements for its School of Medicine will be increased to two years of collegiate work including physics, chemistry, biology and a reading knowledge of one modern language besides English. There are now thirty-nine medical schools which already require at least two years of college work for admission or which have adopted that standard to take effect in the next one or two years.

The University of Tennessee Medical Department has announced that in 1914 and thereafter one year of college work, including courses in physics, chemistry, biology and a modern language will be required for admission. Including the colleges referred to in the preceding paragraphs there are eighty medical colleges which after 1914 will be requiring for entrance one or more years of college work including the sciences named.

Medicolegal

Construction and Constitutionality of Law Prohibiting Distribution of Samples of Medicine

(Ayers vs. State (Ind.), 99 N. E. R. 730)

The Supreme Court of Indiana affirms a judgment against the appellant (defendant) Ayers, who was convicted of unlawfully distributing and causing to be distributed samples of medicine from house to house. The court says that, coming to the statute, Section 1 (Section 2446 of Burns Indiana Statutes of 1908) and Section 2447, each will be found defining two separate and distinct offenses, in each case first prohibiting distribution from house to house of defined substances, and in each also prohibiting the giving away to children of those substances, medicinal preparations in one case, and in the other any deleterious substance, liquid or solid. Counsel for the appellant admitted that as to infants the offense is clearly defined in each case, but they argued that there could have been no reason for prohibiting handing samples of medicine to adults at their homes when the same substance may be handed them on the street. As to Section 2, it is quite clear that the distribution of any deleterious substance from house to house is forbidden, irrespective of the person who may receive it. The court can understand, also, that the taking of samples of medicines by adults, who do not understand the effects of certain medicines on the human system, or on different individuals afflicted with specific troubles, or the taking of medicine at all, without their prescription by qualified persons, may be very harmful, and it thinks it discovers in Section 1 a purpose in the legislature to prevent in some degree the absorption of medicine by those afflicted, or deeming themselves afflicted in a specific way, without regard to their possible effects, from the disposition of many who are afflicted to take anything which promises relief, or is recommended. Whether the act should have gone further, and forbidden the distribution of samples on the streets, was not material to this inquiry. The legislature has a very large measure of discretion in such matters. It also has a wide latitude in determining methods and expedients to accomplish the end of protection of public health. The court must assume that there were reasons in the mind of the legislature which prompted it to prohibit the distribution of medicine from house to house. If it had been deemed wise to except the distribution of medicines to adults at their homes, or distribution from house to house, there would hardly have been used the inclusive language which is employed in the act, and the fact that there is no exception may be considered in determining the intent, and construction to be given the act. The strong tendency of legislation in recent years is to require pure foods and medicines to be furnished, and, as to medicines, that they be administered by competent persons.

It was also urged that the act is invalid because in violation of the provision of the state constitution prohibiting the granting of "privileges and immunities which on the same terms shall not equally belong to all citizens"; but this section cannot be invoked as against the exercise of a purely police power when it is applied alike to all who may be affected alike in its exercise.

Liability of Stepfather for Medical Services

(*Monk vs. Hurlburt* (*Wis.*), *138 N. W. R. 59*)

The Supreme Court of Wisconsin affirms a judgment in favor of the plaintiff for medical services rendered to a stepson of the defendant. The court says that the defendant was a farmer and his stepson, named Murray, who was 17 years of age, while attending school in town, became ill. The plaintiff, a practicing physician and surgeon, was called by Murray's roommate to treat him. Nine years before that Murray's mother was divorced from his father. The decree of divorce gave the custody of the child to the mother, and ordered the father to pay to her $5 per month during the minority of the child for his support, but the father did not do it. Four years thereafter the defendant married Murray's mother, but Murray was never legally adopted by him. On the day after Murray became ill, he went to the home of a married sister in the town, and while he was there he was treated by the plaintiff. Shortly after he became ill, the defendant brought his mother to her daughter's home, and she remained there to nurse him. Later a necessary operation was performed. Supplies and medicines were procured from a drug-store and charged to the defendant. Several times during Murray's illness the defendant came from his farm to see him. During these visits he met the plaintiff, but did not direct him to care for Murray, or to perform the operation; nor did he object to such treatment of Murray by the plaintiff. When Murray had recovered sufficiently so that his mother's attendance was no longer necessary, she returned to the farm, and, when Murray was able, he also went there. While he was at the farm the plaintiff called to treat him, and Murray called at the plaintiff's office for treatment. It was contended that the facts and circumstances shown did not establish the defendant's liability for the professional services the plaintiff rendered for Murray, the defendant's stepson. But the jury found that the defendant stood in the position of a parent to his stepson; that the plaintiff had reasonable grounds for believing that this relation existed; that the defendant had assumed the obligations of providing the boy with necessaries; and that a special exigency as to the boy's health existed requiring medical and surgical treatment. It was manifest that the defendant was fully apprised of the boy's sick condition; that he understood such treatment was necessary; that he knew it was being furnished by the plaintiff; that he interposed no objection thereto; and that he so acted throughout the period of the boy's illness as to show approval of the plaintiff's course in rendering the services. Under this state of the facts, the defendant's liability for the value of the services rendered by the plaintiff was fully established within the principle that the law implies a promise where a parent with full knowledge of the facts and without objection allows and approves of his child being furnished with necessaries.

X-Ray Examinations under Statute Authorizing Physical Examinations

(*State ex rel. Carter vs. Call* (*Fla.*), *59 So. R. 789*)

The Supreme Court of Florida holds that section 3151 of the General Statutes of that state of 1906, giving a trial court discretionary power, in a suit for damages for personal injury, to appoint a physician to make a physical examination of an injured party, is to be construed with due regard to the rights of the parties, and its scope is not to be extended beyond the terms of the statute. The physician appointed to conduct the examination should possess the skill and qualifications requisite to an intelligent performance of that duty. It seems to the court that under the authority of this statute a trial judge may, in the exercise of a sound discretion, on the motion of the defendant, appoint a physician, for the purposes indicated in the statute; that such physician must himself make the physical examination which the statute authorizes; that, while he may use the x-ray in his examination, he has no authority to take x-ray photographs of the person of the party examined without his or her consent; and much less has he the authority to appoint an outside photographer to use the x-ray, or to take such photographs.

From the pleadings before the court it appeared that the judge, acting on two reports, made to him by the physician appointed to examine the plaintiff, to the effect that she had refused to permit him to make an x-ray examination of her person, continued the cause. This ruling was proper, if as a matter of fact the plaintiff did refuse to permit such physician to make such x-ray examination; but the physician appointed by the court had no authority to make himself or to have a photograph made by another, without the consent of the plaintiff. The judge's refusal to permit the trial of the case until the plaintiff did permit such effectual examination to be made would continue to be proper.

A petition for rehearing suggested that it was impracticable for the physician appointed by the court under the statute to make the physical examination of the plaintiff in the action to recover damages for personal injuries without the use of an x-ray machine and the assistance of an expert radiologist to operate the machine and make the plate under the instructions of the examining physician, and that, as the person to be examined refused to submit to a physical examination in the presence of any other person and the appointed physician except such person as she might select, the court was asked to so construe the statute to allow the examining physician to have with him at the physical examination such assistance as he thought to be necessary to a proper examination. But the statute is the only authority for making a physical examination of a person who is suing for personal injuries. Under this authority, which is the sole guide in the matter, if the injured party objects to the presence of other persons than the appointed physician at the physical examination, and the appointed physician cannot make a proper physical examination of the injured party without other persons to assist him, it is within the discretion of the trial court to appoint another physician, who can make the examination as contemplated by the statute; but that court is without authority to compel the presence of another than the physician appointed by him.

Charitable Hospitals Not Liable for Negligence of Nurses

(*Duncan vs. Nebraska Sanitarium Benevolent Association* (*Neb.*), *137 N. W. R. 1120*)

The Supreme Court of Nebraska says that it is a well-established doctrine that a charitable institution conducting a hospital solely for philanthropic and benevolent purposes is not liable to inmates for the negligence of nurses. Some courts say that one accepting the benefits of such a charity exempts his benefactor from liability for the negligent acts of servants. Others assert that non-liability is based on the ground that trust funds created for benevolent purposes should not be diverted therefrom to pay damages arising from the torts of servants. Exemption from liability is frequently sanctioned on the ground that public policy encourages the support and maintenance of charitable institutions and protects their funds from the maw of litigation. While there is a diversity of opinion as to the reasons for the rule, the doctrine itself is firmly established.

Nor does a charitable institution conducting a hospital by accepting compensation from a patient who is able to pay for room, board and care incur liability to such patient for the negligence of nurses. Money accepted from patients who are able to pay it does not go to persons who may be trustees, directors, founders, or incorporators of the institution, and is not a source of pecuniary gain to private individuals, but is devoted to the general purposes of the charity.

Consequently a charitable institution conducting a hospital for benevolent purposes alone does not necessarily incur liability in damages for the death of an insane patient who committed suicide when alone in a room, though pay for the patient's room and care was accepted under an oral agreement to keep a nurse in constant attendance.

13 Simple Syringe Transfusion with Special Cannulas. E. Lindeman, New York.
14 Formula for Determination of Surface Area of Infants. J. Howland, Baltimore, and R. T. Dana, New York.

11. **Influence of Activity on Metabolism of Child.**—The authors' procedure is, as a rule, that the child last receives nourishment at 7 o'clock in the evening, then in the morning, and all the next day it has water and saccharin and is petted a great deal. Older infants are played with and as far as possible kept happy, so that they soon go to sleep after having been put in the apparatus; or they are allowed to go to sleep beforehand and the experiment is begun with the sleeping child. Generally, they begin the experiment at 7 o'clock in the evening; the child has then fasted for twenty-four hours, and the effect of nourishment on the organism is eliminated. If the child sleeps quietly in the apparatus for some hours, the experiment may be considered as an excellent one; absolute physical rest in a fasting condition. The value of the excretion of CO_2 and the consumption of O, which they have ascertained in this manner, gives a glimpse of the fundamental transformation of the infant. Fundamental transformation is the transformation of a person, reposing and fasting, who finds himself in comfortable, warm surroundings.

12. **Is Diphtheria Frequently a Bacteriemia?**—The authors conclude that diphtheria bacilli may occasionally gain access to the blood and be excreted in the urine in very severe cases of diphtheria with marked ulceration of the mucous membrane of the pharynx and tonsils. They believe that identification of diphtheria bacilli in the urine should not rest on morphologic characteristics alone, but be confirmed by isolation and animal inoculation controlled by the use of diphtheria antitoxin.

Annals of Surgery, Philadelphia

June, LVII, No. 6, pp. 785-970

15 *Lymphangioplasty: Handley's Method. P. Syms, New York.
16 Interscapulothoracic Amputation of Shoulder. N. B. Carson, St. Louis.
17 *Solitary Cysts of Liver; Report of Case. H. Norris, Rutherfordton, N. C.
18 *Gas Cysts of Intestine. P. R. Turnure, New York.
19 Etiology of Kidney Cysts. J. R. Caulk, St. Louis.
20 *Experimental Study of Several Methods of Suturing Kidney. J. E. Moore and J. F. Corbett, Minneapolis, Minn.
21 *"Dumb-Bell" Kidney. J. L. Herman and G. Fetterolf, Philadelphia.
22 Traumatic Hydronephrosis. W. E. Drennen, Birmingham, Ala.
23 Cause of Pain in Pyelography with Report of Accident and Experimental Findings. C. E. Tennant, Denver, Colo.
24 Case of Primary Tuberculosis of Glans Penis. E. A. Babler, St. Louis.
25 *Formation of Bone in Human Penis: Report of Case. A. G. Gerster and F. S. Mandlebaum, New York.
26 Anterior Gastro-Enterostomy. D. C. Balfour, Rochester, Minn.

15. **Lymphangioplasty.**—In going over the literature Syms finds that the Handley operation has been performed in twenty cases for brawny arm; in seventeen cases for elephantiasis; in three cases of chronic edema of the leg; in three cases of solid edema of the face and eyelids, and in ten cases of ascites. This does not include a number of cases reported as having been operated on, but in which no details are given. Syms has employed the operation in two cases, one of brawny arm following cancer of the breast, and one of ascites due to cirrhosis of the liver, both failures. In summing up the findings of reported cases of the application of lymphangioplasty in various conditions, the results have been as follows: Brawny arm, 20 cases, with 9 successes and 9 failures, and 2 cases with no report as to swelling. Elephantiasis, 17 cases, with practically 17 failures. Chronic edema of the leg (not elephantiasis), 3 cases, with 3 successes. Chronic edema of the face and eyelids, 3 cases, with 3 successes. Ascites, 10 cases, with success in 5 and with partial success or failure in 5.

17. **Solitary Cysts of Liver.**—None of the cyst wall in this case was excised by Norris, but examination of the fluid removed was entirely negative. It was slightly cloudy, alkaline, specific gravity 1,005, and contained albumin. Microscopic examination showed nothing whatever save cellular detritus.

18. **Gas Cysts of Intestine.**—Concluding from reported cases, and from the examination of his own pathologic specimen in which obliteration of the cysts can be seen in many areas, Turnure says the condition is self-limiting, with a tendency to spontaneous cure. Therefore, if the prediposing cause be treated, there is no indication for resection of the affected bowel or even an attempt at removal of the cysts. The chief characteristics of the lesions are: 1. Extensive gas cyst formation, for the most part situated outside of the longitudinal muscular coat. 2. Characteristic appearances of the gas cysts and the cyst walls, in which the presence of an endothelial-like lining and giant-cells is a feature. 3. Occurrence of spaces or channels, some of which may be lymphatics partly lined by endothelium and partly filled with giant-cells, endotheliod cells, and leukocytes. 4. Evidences of dilatation of lymphatics and of the inter-communication of large lymphatic spaces, possibly cyst spaces with undoubted lymph-channels. 5. Absence of communication between cysts. 6. Inflammatory and productive processes between the cysts and under the peritoneum, resulting in the formation of connective tissue and fibromatous masses, leading to the obliteration of certain cysts and therefore to a kind of healing process. 7. Absence of bacteria in most of the cysts. (The bacteria present in some places are probably post-mortem invaders.) 8. The deposition of highly refractive needles in the interior of many of the cysts, causing a peculiar flattening of the cells belonging to the lining membrane, and the possible rôle of such crystalline matter in the production of some of the giant-cells.

20. **Suturing of Kidney.**—The authors summarize their study as follows: Mattress sutures cause extensive destruction of kidney substance. Silver wire with mattress sutures causes a variable amount of damage. Simple incision with over-and-over sutures does not produce serious lesions. The serrefine method produces slight lesions. While this is not free from infarction, the only legacy left is a slight loss of parenchyma without other complication.

21. **"Dumb-Bell" Kidney.**—The specimen described by Herman and Fetterolf was found while attempting to remove the kidney through a lumbar incision, which they were unable to do. After complete exposure of the kidney through the left loin, the cause of the impossibility of delivery was found to be due to a congenital abnormality, the main feature of which was a continuity of the renal tissue of one side with that of the other across the spinal column. This could be determined readily by means of a finger passed along the dorsal surface of the renal tissue. In freeing the kidney a large renal artery from the left common iliac to the left lower pole was torn away in the supposition that they were dealing with a perirenal adhesion, an unlikely mistake in the living, in the presence of pulsation.

25. **Formation of Bone in Human Penis.**—The authors' patient, a male, was 49 years old and married. There was a history of syphilis, no gonorrhea, no acute infectious disease. Patient had worn a pair of corsets of the straight front type for three years. About eight months ago he noticed at the place where, in the sitting posture, the lower anterior rim of the corsets impinged on the upper aspect of the root of the penis, the appearance of a small indurated mass the size of a pea. Gradually this mass extended downward along the middle of the dorsum of the organ. The presence of this body caused the patient no inconvenience whatever, except in erection of the penis, when an increasing amount of upward incurvation acted as an insurmountable obstacle to the introduction of the organ into the female genital tract. The specimen which was removed measured 3.5 cm. x 1.7 cm. x 2 to 3 mm. and was a flat, thin plate of tissue containing areas of bony hardness. The bone runs through the middle portion of the sections, and the surrounding tissues are of different character on either side. On one side there is a layer of extremely dense fibrous tissue, showing a moderate number of compressed nuclei and a few small blood-vessels, and staining faintly with hematoxylin. Although a sharp line of demarcation is noted between the fibrous tissue and the bone, the two are in close relation. The different staining qualities of the two types of tissue are seen at a glance. On the other side

of the bone a narrow zone of the same type of dense fibrous tissue is seen. Beyond this is a layer of muscle fibers, loose connective tissue, and small blood-vessels. The dense fibrous tissue just described represents the tunica albuginea, and the bone formation has taken place in this tissue. The bone shows characteristic Haversian canals of various sizes, surrounded by more or less prominent concentric lamellae and lacunae. Some of the canals are of minute size and apparently empty; larger ones show the presence of cells having all the appearances of marrow cells. Running through the middle of the bone are several large oval shaped canals. Many of these contain true marrow and large multinuclear cells (osteoclasts?) and probably represent an attempt at the formation of a true central canal. At the junction of the bone with the fibrous tissue on both sides, typical osteoblasts are seen in many places.

Archives of Pediatrics, New York

June, XXX, No. 6, pp. 402-480

27 Amaurotic Family Idiocy. I. H. Coriat, Boston.
28 Neuroses of Childhood. C. W. Burr, Philadelphia.
29 Choreas of Childhood. T. H. Weisenburg, Philadelphia.
30 *Epilepsy in Childhood. J. H. Lloyd, Philadelphia.
31 Dispensary Treatment of Chorea. A. Newlin, Philadelphia.
32 *Recurrent Vomiting in Children. A. C. Mercer, Syracuse, N. Y.
33 Physician and Mentally Defective Child. I. T. Smart, New York.
34 Mental Influences in Treatment of Children. A. MacAlister, Camden, N. J.
35 Tumor of Cerebellum. S. S. Adams, Washington, D. C.
36 Cause and Prevention of Adenoid Growths in Children. H. E. Jordan, Charlottesville, Va.

30. **Epilepsy in Childhood.**—He who pins his faith entirely to drugs in treating epilepsy in children, Lloyd says, does not see and do his whole duty. Hygienic, mental and moral control are likewise of first importance. Attention to the gastro-intestinal tract, regulation of the sleeping hours, control of the schooling, outdoor life, and a wise discipline are all necessary.

32. **Recurrent Vomiting in Children.**—All treatment in a well-developed attack, Mercer says, has failed to stop the vomiting. The usual remedies given for emesis have been tried in vain. Nothing stays in the stomach. Based on the hypothesis that recurrent vomiting is an acid auto-intoxication, large doses of bicarbonate of soda have been administered. Ten to 30 grains have been given three times a day during the intervals, and every hour or two at the onset of an attack until 100 grains have been given, or 120 grains in twenty-four hours. Afterward a sufficient amount has been given to keep the urine alkaline. The alkaline treatment has been remarkably successful in some hands and a failure in others. It seems to be more likely to be successful when started in the prodromal period and a failure when begun too late. In fact, he says, one is led to believe that if the prodromes are promptly recognized and the diet is immediately curtailed, or food is temporarily omitted, the intestinal tract cleared and bicarbonate of soda given freely, an approaching attack can be prevented, even if the bicarbonate of soda has been discontinued during the preceding interval. The treatment is not simply alkaline. It is also one of dietetic rest, liver rest and toxic elimination, which is suggested by the occurrence of essentially the same events in the natural course of an attack, catharsis in treatment replacing emesis in the disease. Successful abortive treatment suggests prophylactic treatment along the same lines to be given at regular intervals somewhat shorter than the shortest interval noted in the history of a particular case. If treatment is begun too late for the stomach to retain the bicarbonate of soda, a dram or two of the remedy dissolved in 8 ounces of normal saline solution may be given by rectum. If vomiting continues, the thirsty tissues may be supplied with normal saline solution by high enemas or subcutaneous injections. If incomplete catabolism of fat with acidosis were a fundamental etiologic factor, an enema of dextrose might be indicated. Occasionally an hypodermic dose of morphin may be of service. In the intervals much can be done to improve the condition of patients by eliminating from their lives, so far as may be, all factors that have been known in one way or another to be etiologic in recurrent vomiting, as, for instance, constipation, over-eating, questionable diet, occasions for over-excitement, too much indoor life at home or in school, eye-strain, adenoids, or, in fact, anything, physical or psychical, which may lower resisting power or be a source of reflex irritation, and, on the other hand, by using all available means to build up resisting power and develop a hygienic and sane mode of living.

Arkansas Medical Society Journal, Little Rock

June, X, No. 1, pp. 1-36

37 Fee Splitting and Other Evils That Are Commercializing the Medical Profession. C. H. Cargile, Bentonville.

Boston Medical and Surgical Journal

July 3, CLXIX, No. 1, pp. 1-36

38 Some Abuses in Surgical Practice. H. Gage, Worcester, Mass.
39 Causes of Juvenile Delinquency. E. R. Spaulding, South Framingham, Mass.
40 Intestinal Stasis. E. G. Schlesinger, London.
41 *Five Generations of Blue Sclerotics and Associated Osteoporosis. F. A. Conlon, Lawrence, Mass.
42 Case Illustrating Efficiency of High Frequency Current in Treatment of Tumors of Bladder. J. D. Barney, Boston.
43 Compulsory Dentistry. F. A. Keyes, Boston.

41. **Five Generations of Blue Sclerotics.**—The history of the family reported by Conlon is as follows: Mr. B., aged 48, head of the present generation, has marked blue sclerotics and slight hypermetropia. He has broken a wrist and three ribs, but this occurred from considerable violence. His one sister had blue sclerotics and broke her hip from a trifling cause. Both this sister's children also have blue sclerotics, but no history of fractures. This patient's mother had the same blue sclerotics as did a sister whose only two children showed the same anomaly. Another sister had normal sclerotics, as did all of her five children. This man is married and his wife has normal colored sclera. They have five children and all five show this same peculiar porcelain blue appearing sclerotics. Of these children three show signs of bone fragility. Ethel, aged 12, fractured her left arm five years ago from a slight fall. In August, 1911, she broke and dislocated her left hip from a fall of ten or twelve inches. In May, 1912, a dog jumping on her knocked her down, breaking her right leg. Her right eye is amblyopic, while she has 2 D hypermetropia in her left eye. She has a well-marked embryotoxon on the upper and lower margin of each cornea. Sclera are a deep blue.

Beatrice, aged 25, has pale blue sclerotics. Embryotoxon on upper and lower margin of each cornea. Brown colored irides. Mrs. B., aged 22, deep blue sclerotics. Slight degree of hypermetropia. Blue colored irides. Has had one fracture. Her child, which was the only member of the fifth generation, was born a month ago, but died one week later. The child had deep blue sclera and died from congenital heart disease. Eva, aged 18, pale blue sclerotics. Embryotoxon on upper and lower margin of each cornea. One fracture of wrist four years ago. Moderate degree of hypermetropia astigmatism in each eye. Brown colored irides. Rose, aged 14, pale blue sclerotics. Embryotoxon on upper and lower corneal margin. No fracture. Brown colored irides. Emmetropic.

This family is of rather small physique. This was also characteristic of the family reported by Bishop Harmon. In no member did Conlon find the Fuchs colobomata or oval disk which were found in the Stephenson-Harmon family.

Bulletin of Johns Hopkins Hospital, Baltimore

July, XXIV, No. 269, pp. 199-230

44 Surgical Judgment. J. M. T. Finney, Baltimore.
45 *Tests for Hepatic Function and Disease under Experimental Conditions. G. H. Whipple, V. R. Mason and T. C. Peightal, Baltimore.
46 *Multiple Congenital Osteochondromas, with Degeneration of Cranial Nerves and Muscular Dystrophy. T. R. Boggs, Baltimore.
47 *Pathology of Syphilitic Aortitis with Contribution to Formation of Aneurysms. M. C. Winternitz, Baltimore.
48 Aortic Aneurysm Rupturing Into Pulmonary Artery: Report of Three Cases. H. N. Stevenson, Baltimore.
49 *Allergy and Reinfection in Tuberculosis. E. R. Baldwin, Saranac Lake, N. Y.

45. Tests for Hepatic Function.—Passive congestion of the liver, it is claimed by the authors, cannot be produced in dogs to the extreme degree seen in human patients with broken cardiac compensation. However, it is possible to produce passive congestion of the abdominal viscera by means of stitches placed in the vena cava inferior just above the diaphragm, narrowing the lumen to 1 or 2 mm. in diameter. Such animals develop extreme ascites, collateral circulation, enlarged spleen, etc., and they show a slight decrease in liver excretion of phthalein with no escape in the urine. The Eck fistula produces a liver which has a scanty blood-supply, chiefly arterial, and the liver undergoes a slow atrophy with some fatty change in the early stages. These dogs show a decrease in phthalein output (20-30 per cent.) and the urine contains 0.5-3 per cent. phthalein. This indicates a certain degree of liver insufficiency and liver injury. It is interesting that an Eck fistula dog living over a year has an output which has returned practically to normal and only traces of phthalein in the urine, indicating that the liver has regained its functional balance. The clinical features of these animals support this interpretation. It is clear to the authors that phenoltetrachlorphthalein gives promise as a functional liver test. It is excreted in the bile through activity of the liver epithelium and not the bile duct epithelium. Any agent which injures the liver parenchyma or interferes with its functional activity will cause a drop in phthalein output in the feces. Acute liver injury also is associated with an escape of phthalein in the urine, they believe due to a modification of the phthalein through the agency of the injured liver cells, so that it passes through the renal epithelium.

46. Multiple Congenital Osteochondromas.—In Bogg's case the bone findings were as follows: Skull: Small, but normally proportioned. Mandible normal. No exostosis made out. Spine: No abnormalities made out, except that apparently there are six lumbar vertebrae and one less in sacrum. Pelvis: Thickening of os pubis, huge exostosis, projecting from left under side of ilium. Clavicles thickened at inner ends. Scapulae and ribs normal to palpation. Arms: Upper third of both humeri much thickened and irregular. Hand normal. Large, irregular exostoses, size of a man's fist, project from inner aspect at junction of upper and middle third. These are very hard, with small flaccid bursae at outermost points of each, containing a few bean-sized bony, or calcareous, bodies. The lower ends of humeri seem normal. Exostoses on both ends of the forearm bones. Radii overgrown and bowed outward. Small spur on each first metacarpal. Some irreguarity at bases of first phalanges. Other bones of wrists and hands normal. Legs: Upper ends of thighs much thickened, several spine-like outgrowths on each shaft. The fibulae show very large, bony tumors at the head, the left larger. These are irregular, firm, and no bursae are felt. The bony masses, as large as an orange, contrast strangely with the atrophic legs. Exostoses are present about the malleoli on both sides. Marked talipes equinus, bilateral, but no large exostoses are felt on bones of the feet. Urine: Faint trace of albumin and a few hyaline casts. No Bence-Jones protein. Blood: R. B. C. 6,400,000; Hb., 90 per cent.; W. B. C. 8,300. Differential count shows normal formula. No anisocytosis. No abnormal constituents. Roentgenoscopy: Rarefaction of bones, with numerous exostoses of osteochondromatous type, symmetrically disposed on extremeties and on pelvic bones. The largest tumor at the head of the left fibula is apparently cystic. The skull seems entirely free from exostoses and the sella turcia is normal in size. Summary: Multiple congenital osteochondromas (father similarly affected).

47. Pathology of Syphilitic Aortitis.—In Winternitz' opinion there is no evidence in favor of the view that the medial fibrosis occurring in aortitis is the source of the aneurysms occurring in this condition. On the other hand his case showed an aneurysm in its incipiency with the minute sac extending through the acutely broken and necrotic media to the adventitia, where there is a specific granuloma present. This, he believes, indicates that aneurysms of the aorta may form in the active stage of syphilis. The adventitia shows the specific granulomatous process most characteristically. An extension of the inflammation from the adventitia to the media no doubt plays an important rôle in the destruction of the medial fibers. In addition the rupture of the elastic lamellae may depend in part on the diminished support offered by the non-diseased adventitia.

49. Allergy and Reinfection in Tuberculosis.—Most adults Baldwin says, have received some tuberculous infection. A variable degree of specific allergy is thus acquired. During ordinary health the tissues repel tubercle bacilli, partly with the aid of specific allergy. Reinfection is mostly autogenous superinfection and due to disease, overstrain, trauma, or any cause of lowered vitality, whatever that may mean. Finally, as a corollary, adults are very little endangered by close contact with open tuberculosis, and not at all in ordinary association. Childhood is the time of infection, youth the time of superinfection, and that from extension of the primary disease. Qualify these statements as we may, Baldwin believes, it is time for a reaction against the extreme ideas of infection now prevailing. There has been too much read into the popular literature by health boards and lectures that has no sound basis in fact, and it needs to be dropped out or revised. More protection of children and better hygiene for adults are logically demanded, but beyond this the preachments about the danger of infection to adults in the present state of society are without justification from an experimental standpoint.

Journal of Abnormal Psychology, Boston

July, VIII, No. 2, pp. 73-136

50 Analysis and Interpretation of Dreams Based on Various Motives. M. Solomon, Chicago.
51 Simple Phobia. E. Jones, Toronto.
52 Unusual Type of Synesthesia. J. H. Coriat, Boston.
53 Perversion No [illegible] Otis.
54 How Far Is [illegible] *for Delusions?* E. E. Southard and A. W. Stearns, Boston.

Journal of Experimental Medicine, New York

July, XVIII, No. 1, pp. 1-112

55 *Oxygen Content of Blood in Rabbits Infected with Pneumococcus. F. W. Peabody, New York.
56 *Oxygen Content of Blood in Lobar Pneumonia. F. W. Peabody, New York.
57 *Agglutinins for Treponema Pallidum. J. A. Kolmer, Philadelphia.
58 *Intestinal Obstruction in Rabbit. C. H. Bunting and A. P. Jones, Madison, Wis.
59 Mechanical Obstruction to Circulation of Kidney Produced by Experimental Acute Toxic Nephropathy. A. A. Ghoreyeb, Boston.
60 *Experimental Pneumonia in Rabbits: Role of Leukocyte. B. S. Kline and M. C. Winternitz, Baltimore.
61 *Idem: Studies in Immunity. B. S. Kline and M. C. Winternitz, Baltimore.
62 Addition of Cholesterin to Alcoholic Extracts of Tissues Used for Antigens in Wassermann Reaction. I. C. Walker and H. F. Swift, New York.
63 Malarial Pigment (Hematin) As Active Factor in Production of Blood-Picture of Malaria. W. H. Brown, Chapel Hill, N. C.
64 Effect of Hematin on Circulation and Respiration. W. H. Brown and A. S. Loevenhart, Madison, Wis.

55. Oxygen Content of Blood in Rabbits.—In rabbits with a severe pneumococcus bacteriemia, Peabody found that the oxygen-combining power of the blood falls progressively, up to the time of death. Coincident with this there is an even more marked fall in the oxygen content of the arterial blood. The changes in the blood in infected animals are analogous to those seen when the pneumococcus is grown on blood *in vitro*. They are due to the conversion of hemoglobin into methemoglobin.

56. Oxygen Content of Blood in Lobar Pneumonia.—In most cases of uncomplicated lobar pneumonia the decrease of respiratory surface is completely compensated for, and the oxygen content of the blood is within normal limits. Occasional cases of uncomplicated pneumonia have an oxygen content of the venous blood which is below normal. In the two cases reported by Peabody, this was associated with a carbon dioxid content of the blood which was higher than normal, and the condition was apparently due to an interference with the respiratory exchange of gases. In the *terminal* stage of the fatal cases of pneumonia in which death does *not* occur with great suddenness, there is often a progressive diminution in the oxygen content of the blood. Synchronous with this is a progressive decrease in the oxygen-combining capacity of the blood. These changes are usually seen in patients in whom an intense bacteriemia has developed and are analogous to those found in the arterial blood of infected rabbits, and to those resulting from the growth of the pneumococcus in blood *in vitro*. In all three conditions there is probably a change of oxyhemoglobin to methemoglobin. This change of the hemoglobin molecule, so that it no longer takes up and gives off oxygen readily, is probably a factor in the immediate cause of death in many cases of pneumonia.

57. **Agglutinins for Treponema Pallidum.**—Kolmer summarizes his paper as follows: There is no demonstrable amount of agglutinin for *Treponema pallidum* (Noguchi) in normal human and normal rabbit serum in dilutions as low as 1:20. Agglutinins for *Treponema pallidum* are readily produced in young rabbits by the administration of pure cultures of living spirochetes. There is no appreciable amount of agglutinin for *Treponema pallidum* culture used in the serums of secondary and tertiary syphilis or in the cerebrospinal fluid of tertiary syphilis in dilutions of 1:20 to 1:640.

58. **Intestinal Obstruction in Rabbit.**— The authors voice the conviction that in the fasting rabbit the duodenal mucosa alone secretes, that this secretion comes from the glands of Brunner, and, being toxic, is responsible for the death of the animal with obstruction of the small intestine at whatever level the obstruction be made.

60. **Experimental Pneumonia in Rabbits.**—The importance of the leukocyte in the resistance of animals to experimental pneumonia, the authors believe, is emphasized by the fact that animals treated with benzol, a leukotoxic substance, rapidly succumb to the disease, while animals treated in like manner with toluol, a very similar chemical substance causing no leukopenia, show no decreased resistance. The rôle of the leukocyte in the resistance of animals to experimental pneumonia is further emphasized by the fact that animals that respond to the pneumococcus infection with a leukocytosis, as occurs after the repeated injection of toluol, are more resistant to the pneumonia. Further, the hyperleukocytosis produced by repeated injection of nutrose before the production of pneumonia likewise seems to increase the resistance of the animals. Experimental pneumonia is not necessarily fatal in rabbits. The factors determining the outcome of the disease are numerous; among these is the number of bacteria inoculated. Animals receiving small doses usually survive, while those receiving comparatively large numbers usually succumb.

61. **Idem.**—Kline and Winternitz found that rabbits recovering from one attack of experimental pneumonia possess an active immunity. Such animals may subsequently withstand repeated increasing doses of pneumococci intratracheally. Death may supervene after any one of subsequent injections, but it seems to depend partly on the chronic changes in the cardiorespiratory apparatus. It may at least be said that it is usually unassociated with a septicemia which is an invariable accompaniment of fatal primary lobar pneumonia. The serum from animals actively immunized by the repeated intratracheal inoculations with pneumococci may be used successfully to confer a passive immunity against the homologous organism.

Journal of Outdoor Life, New York

July, X, No. 7, pp. 193-222

65 Diet and Tuberculosis. C. Flick.
66 Inexpensive Home-Made Milk Refrigerator. A. F. Hess, New York.
67 Taking Cure in City. F. Erdwurm, New York.
68 After-Care of Sanatorium Patients. J. B. Hawes, Boston.

Laryngoscope, St. Louis

June, XXIII, No. 6, pp. 641-719

69 Atrophic Rhinitis in Its Historical, Etiologic and Histologic Aspects. J. Wright, New York.
70 Complications of Operation for Removal of Tonsils. C. W. Richardson, Washington, D. C.
71 Differential Diagnosis between Vincent's Angina and Primary Syphilitic Lesion of Tonsil. R. Levy, Denver.
72 Suspension Laryngoscopy, with Report of Cases. S. Iglauer, Cincinnati.
73 Regeneration of Membrana Tympani. G. M. Coates, Philadelphia.
74 Primary Tuberculosis of Middle-Ear. C. H. Long, Chicago.
75 Foreign Body in Larynx and Trachea Removed by Aid of Suspension Laryngoscope. S. Iglauer, Cincinnati.
76 Direct Laryngoscopes. C. Jackson, Pittsburgh.

Medical Record, New York

July 5, LXXXIV, No. 1, pp. 1-46

77 Methods of Localization of Spinal Tumors with Reference to Their Medical and Surgical Treatment. E. Castelli, New York.
78 Custodial Power Over Inmates of State Institutions for Defectives. W. T. Shanahan, Sonyea, N. Y.
79 Bilateral Optic Pseudoneuritis and Unilateral Medullated Nerve Fibers in Cranial Injury by Blunt Force. M. Talmey, New York.
80 Hexamethylenamin in Surgery. A. C. Burnham, New York
81 Sexual Periodicity in Male. C. P. Oberndorf, New York.
82 Foreign Body in Right Bronchus. Lower Bronchoscopy. Successful Extraction. G. H. Cocks, New York.

Military Surgeon, Washington, D. C.

June, XXXII, No. 6, pp. 527-622

83 Relation of Medical Officers to Military Discipline. R. H Pierson, U. S. Army.
84 Hygiene of Tropics. F. A. Ashford, U. S. Navy.
85 Venereal Disease in United States Navy: Prevention and Prophylaxis. R. E. Ledbetter, U. S. Navy.
86 *Series of Cases of Pneumonia Treated by Vaccines. W. N. Bispham, U. S. Army.
87 Straddle Trench Cover. R. U. Patterson, U. S. Army.
88 Sanitation Fly Pest. C. B. Walls, Chicago.

86. **Vaccines in Pneumonia.**—The series of cases which Bispham reports comprised nineteen cases with two deaths. Six patients were treated symptomatically with two deaths, and in thirteen patients vaccine was administered with no deaths. No selection of cases was made, but the patients treated medically were those first occurring, and as soon as the vaccine was obtained all others were inoculated. The severity of the cases throughout the epidemic was about the same, the first few not being more serious than the others. The vaccine first used was prepared at the Army Medical School and subsequently a stock vaccine was used. No attempt was made to obtain autogenous vaccine, as the heterogenous variety was so satisfactory. The treatment should begin as early as a diagnosis is made. Where delay occurs, the success of the treatment is not so immediate and not so complete. The dosage is regulated on a sliding scale. An injection of 50 million bacteria is, in most cases, sufficient as an initial dose, but some sthenic cases will respond more favorably to larger doses up to possibly 150 million. All subsequent injections should be increased rapidly, giving 100 million on the second day, 200 million on the third, etc. The clinical picture of the patient should regulate, however, the amount used, and to err on the side of excess is as detrimental as to give too little. These doses are given in the following way: Immediately after a diagnosis is made, the primary injection is administered. On the following day, if the patient improves, no treatment is necessary, but if the temperature remains high and the case is sthenic, an increased amount may be given at this time. On the third day, if the patient does not show sufficient abatement of symptoms, give another inoculation. This method of grading the treatment by observing the clinical symptoms must be adhered to, though if opsonic counts could be taken such observations would be a valuable check on the work. The immediate fall of temperature after the injection of each dose of the vaccine, together with the great relief from the distressing symptoms, such as severe pain and dyspnea, was very marked. None of these patients treated by the vaccines received other treatment, though stimulants were administered when thought necessary.

Missouri State Medical Association Journal

June, IX, No. 12, pp. 385-428

89 Prophylaxis of Poliomyelitis Anterior Acuta. E. W. Saunders, St. Louis.
90 Roentgen-Ray Diagnosis of Thoracic Aneurysm. R. D. Carman, Rochester, Minn.
91 Transplantation of Bone. E. F Robinson, Kansas City.
92 State Hospital Situation in Missouri. M. A. Bliss, St. Louis.
93 Blood-Pressure. L Carthrae, Corder
94 Abdominal Pain. G. J. Weitz, Boonville.

New Mexico Medical Journal, Las Cruces

June, X, No. 3, pp. 61-88

95 Typhoid. E. T. Dunnaway, Portales.
96 Tonsil in Its Relation to General Diseases. T. W. Crowder, El Paso.
97 Tonsils as Avenues of Infections and Indications for Their Removal. D. D. Swearingen, Clovis.
98 Poliomyelitis. M. K. Wylder, Albuquerque.

New York State Journal of Medicine, New York

June, XIII, No. 6, pp. 297-354

99 Further Control of Morbidity and Mortality in Abdominal Operations for Pelvic Diseases. G. W. Crile, Cleveland.
100 Conclusions Drawn from Quarter Century's Work in Brain Surgery. R. Park, Buffalo.
101 Present Status of Nerve Injection. O. Kiliani, New York.
102 Recurrent Vomiting in Children. A. C. Mercer, Syracuse.
103 Pituitrin in Obstetrics. J. K. Quigley, Rochester.
104 Difficulties in Diagnosis of Extra-Uterine Pregnancy. S. M. Brickner, New York.
105 *Symptoms and Diagnosis of Involvement of Heart in Syphilis (Based on Study of 200 Cases.) H. Brooks and J. H. Carroll, New York.
106 Abbott Treatment of Scoliosis. R. R. Fitch and H. L. Prince, Rochester.
107 Physician and Mentally Defective Child. I. T. Smart, New York.
108 *Auscultation At Acromion Process—Its Importance in Apical Disease. R. Abrahams, New York.

105. Abstracted in The Journal, May 10, p. 1483.

108. Also published in the *Archives for Diagnosis*, May, 1913, and abstracted in The Journal, July 12, 1913, p. 142.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

June, XVI, No. 6, pp. 259-306

109 Treatment of Facial Paralysis by Nerve Transplantation. S. H. Watts, Charlottesville, Va.
110 Internal Injuries. E. B. Claybrook, Cumberland, Md.
111 Anoci-Association with Special Reference to Abdominal and Exophthalmic Operations. G. W. Crile, Cleveland.

Ophthalmic Record, Chicago

June, XXII, No. 6, pp. 291-348

112 Concerning Dermoids and Dermo-Lipomas of Conjunctiva. W. B. Weidler, New York.
113 Case of Non-Magnetic Steel in Vitreous. F. Allport and A. Rochester, Chicago.
114 Some Simple Attachments for Electric Hand Lamps. F. H. Verhoeff, Boston.
115 Case of Gumma of Iris after Use of Salvarsan. A. Brav, Philadelphia.
116 Proper and Improper Methods of Publicity from Specialist's Standpoint. H. V. Würdenmann, Seattle, Wash.
117 Enucleation under Ciliary Ganglion Anesthesia. J. S. Wyler, Cincinnati.
118 Case of Pulsating Exophthalmos. G. H. Mathewson, Montreal.

Southern Medical Journal, Nashville

June, VI, No. 6, pp. 355-422

119 Fly-Borne Typhoid and Its Control in Jacksonville. C. E. Terry, Jacksonville, Fla.
120 Present Status of Our Knowledge Regarding Transmission of Typhoid. A. W. Freeman, Richmond, Va.
121 Vaccine Therapy. I. E. Colgin, Waco, Texas.
122 Present Status of Our Knowledge Regarding Parasitic Amebae. C. F. Craig, Washington, D. C.
123 Diagnosis and Treatment of Amebic Dysentery. E. M. Mason, Birmingham, Ala.
124 *Old Ununited Fracture of Anatomic Neck of Femur—with Suggestions for Immediate Treatment of this Fracture. J. B. Murphy, Chicago.
125 *Theory of Etiology of Pellagra. T. L. Driscoll, Cartersville, Ga.
126 Uterine Hemorrhage. H. A. Royster, Raleigh, N. C.
127 Two Unusual Cases of Nasal Polypus, Occurring in Sisters, with Results of Operations. C. W. Kollock, Charleston, S. C.
128 Bacteriology of Epidemic Colds. S. L. Ledbetter, Birmingham, Ala.
129 After-Treatment of Cases of Radical Operations in Oto-rhinology. J. A. Stucky, Lexington, Ky.

124. **Ununited Fracture of Femur.**—The indications for treatment of recent fractures of the neck of the femur according to Murphy are (1) that the shortening should be overcome by extension in all except the impacted cases; (2) that the rotation should be overcome by holding the toes in a perpendicular position, the foot being neither everted nor inverted; (3) that immobilization should be effected so that the fractured fragments be pressed into each other by superlative abduction of both legs, which is secured by putting the patient into the travois splint. By means of this superlative abduction all of the adductor muscles, fascia and capsular ligaments are utilized to force the distal fragments firmly against the proximal fragment and to keep it there constantly during the process of repair. At the same time the traction of the trochanter major group of muscles is overcome by the relaxation produced in them by this superlative abduction. This position must be maintained constantly and uniformly throughout the entire course of the process of repair. Murphy has observed clinically that absorption of the neck does not take place when immobilization is made effectively and continuously, so that the contracting of the fractured surfaces is maintained. The long external splint, with or without extension, the ordinary Thomas splint, the Maxwell-Ruth splint, do not fulfil the indications of proper management of fractures of the neck of the femur. The plaster-of-Paris cast, including both hips with abduction of both legs, meets the conditions in impacted fracture of the neck, but it is very inconvenient to the patient. The so-called "railway splint" is likewise deficient. While most of these splints are worthless in the management of these cases, yet sometimes, notwithstanding their defects, it is possible to secure union of the fragments with their aid. But no splint, even with extension, abduction or sidewise traction, can secure union of the fragments when there is interposing between them capsule or other soft tissue. Murphy made that observation in four successive operations done for ununited fracture of the neck of the femur. In some of them the interposition of soft tissue can readily be recognized in the skiagram, while in others it is impossible to detect it. The amount of weight attached to the extension apparatus placed on the limb must vary with the muscular development of the individual patient. As a rule, it should range from 15 to 35 pounds. To attach a 10 or 15-pound weight to the leg of a muscular patient is of absolutely no value whatever. Murphy sounds a note of warning in applying the Buck's extension, namely, that the external popliteal nerve, where it passes around the neck of the fibula, from behind forward, should be freed from all pressure by bandages or cast, if one is desirous of avoiding the characteristic drop-foot paralysis, which is caused by pressure on that nerve. In all cases in which Murphy applies a plaster cast to the leg, including the head of the fibula, he always cuts out a window over this bone, so that there will be absolutely no pressure on the nerve. He cites nine cases of old ununited fractures treated successfully by nailing.

125. **Etiology of Pellagra.**—Driscoll believes pellagra to be due to absence of a hormone or a chemical substance in the grain capsule, and the omission of this from the dietary of the cornbread eater, by artificial means, is responsible. The following work has been done in corroboration of this theory: Chickens fed on corn with the covering removed developed manifestations on legs similar to pellagra in man. Chickens fed on bran only develop same condition as those fed on corn exclusive of bran. Feeding whole grain intact will cause disappearance of lesions in about three weeks.

West Virginia Medical Journal, Wheeling

June, VII, No. 12, pp. 399-434

130 Present Status of Surgery in Fractures. C. S. White, Washington, D. C.
131 Treatment of Insane in Psychopathic Wards. J. H. W. Rhein, Philadelphia.
132 Study of Diagnosis in Children. O. M. Staats, Wheeling.
133 Helplessness of Physician. C. H. Maxwell, Morgantown.

Wisconsin Medical Journal, Milwaukee

June, XII, No. 1, pp. 1-34

134 Certain Aspects of Intestinal Bacteriology in Health and Disease. A. I. Kendall, Chicago.
135 Non-Surgical Treatment of Otitis Media. O. N. Mortenson, Waupaca.
136 Radical Operation for Hernia under Cocain Analgesia. Experience in Twenty-Five Cases. R. G. Sayle, Milwaukee.
137 Cutaneous Reaction of Syphilis. L. M. Warfield, Milwaukee.
138 The Physician: What Are Requirements? W. B. Hopkins, Cumberland.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case-reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

June, X, No. 114, pp. 241-288

1 Some Cases of Mental Deficiency. E. B. Smith.
2 Epidemic of Measles at Rotuma, 1911. B. G. Corney.
3 Primary Streptococcus Peritonitis in Child, with Septicemia, Ending in Recovery. A. MacLennan and J. W. McNee.
4 Case of Tuberculosis of Ear. G. N. Biggs.

British Medical Journal, London

June 21, I, No. 2738, pp. 1305-1356

5 *Spinal Anesthesia by Tropacocain. J. T. J. Morrison.
6 *Lacrimal Gland in Surgical Anesthesia. L. T. Rutherford.
7 Trypanosomiasis and Big Game. W. Yorke.
8 Outbreak of Febrile Disease in Industrial School. K. M. Duncan.
9 Case of Nodular Leukemia. R. Reid, W. Calwell and W. W. D. Thomson.
10 *Case Illustrating Great Tenacity of Life. A. Turnbull.
11 Influence of Marienbad Sulphate Water on Albuminuria. M. Porges.

5. **Spinal Anesthesia by Tropacocain.**—The position of spinal anesthesia is summed up by Morrison as follows: It is a procedure of proved value and simple technic. Its province is subdiaphragmatic operations. There is no prohibitive age limit. By blocking afferent paths it prevents surgical shock. It induces muscular relaxation, quiet breathing and abdominal stillness, and thus conduces to rapidity and safety in abdominal surgery. Used with discretion in conditions of extreme asthenia and instability of the medullary centers due to toxemia, exhausting disease, traumatic shock and old age, it is superior to ether and chloroform. It promotes the patient's comfort and nutrition in the postoperative stage. By lowering blood-pressure it tends to faintness and respiratory depression. The patient should therefore be carefully watched after injection, and treated as required by means of diffusible stimulants, pituitrin, saline infusion and artificial respiration. In a small percentage of cases it is inadequate, and must be supplemented by general anesthesia. It increases the possibilities of surgery by facilitating the work of a surgeon in the absence of a competent anesthetist or assistant. The procedure should be taught in medical schools.

6. **Lacrimal Gland in Surgical Anesthesia.**—Rutherford insists on the truth of the following three statements: 1. That since the appearance of a lacrimal secretion during anesthesia is a constant phenomenon, it therefore deserves mention in books devoted to the subject of anesthetics. 2. That the lacrimal secretion, bearing as it does a definite relation to the depth of narcosis, is of value to the anesthetist. 3. That since the behavior of the lacrimal glands under anesthesia is almost constant and since the exceptions to the general rule are easily recognized, the value of this sign as an aid to the administration of an anesthetic must be at once apparent.

10. **Case Illustrating Great Tenacity of Life.**—Turnbull reports the case of a man who walked half a mile after receiving a fractured skull, extensive fractures of the ribs, pulping of the spleen and pulping of the kidney and lesions in the vicinity of the solar plexus. The patient rapidly sank into unconsciousness and died with symptoms pointing to internal hemorrhage about an hour after admission. He had a fracture of the frontal bone extending down on the left side to the inner end of the supraorbital ridge. This part measured 2½ inches and had a small offshoot on either side. On the base of the skull the fracture was traced along the left orbital plate and across the sella turcica to the right middle fossa, ending just above the base of the petrous bone on the right side. A slight diffuse subarachnoid hemorrhage was present, especially over the posterior part of the right parietal lobe. A fracture was found through the first left costal cartilage near the sternum, and some tearing up of the sterno-clavicular ligaments and fibroplate; no actual dislocation. The second, third, fourth, fifth and sixth ribs were broken through about their middles. The parietal pleura was torn over the broken ends of the third and fourth ribs, and 6 ounces of blood was found in the left pleural sac. The eleventh rib was fractured toward the exterior end. Both lungs edematous, otherwise healthy; no perforation of left lung, only slight bruising. Heart fairly normal. Two pints of fresh blood were found in the abdominal cavity. The spleen was extensively lacerated. There was much hemorrhage into the connective tissue round the left kidney and suprarenal. The left kidney was markedly crushed and lacerated. The right kidney was uninjured, as also was the liver. The esophagus, stomach and intestines were uninjured. No blood in the feces and no injury to the bladder. No injuries to the bones or spinal column.

Dublin Journal of Medical Science

June, III, No. 498, pp. 401-480

12 *Treatment of Hemoptysis. J. Little.
13 Intratracheal Insufflation of Ether. H. de L. Crawford.
14 *Two Unusual Cases of Enteric Fever. J. Moore.

12. **Treatment of Hemoptysis.**—Little places confidence in the hypodermic injection of morphin (gr. 1/6) and atropin (gr. 1/20), perfect quiet, and more particularly the avoidance of any physical examination beyond laying the chest piece of a binaural stethoscope on the chest and hearing what can be heard without permitting the patient to cough or draw a deep breath, and in very spare diet and on the gentle opening of the bowels.

14. **Enteric Fever.**—The first case cited by Moore furnishes an example of true relapse in enteric fever. It is also interesting in view of the absence of any serious intestinal symptoms—a state of things accounted for by the patient's age (57 years); the presence of a decided leukocytosis in the third febrile attack; and the occurrence of catarrhal jaundice as a sequel. Bearing in mind the liability of the gall-bladder to become infected by the *Bacillus typhosus*, and the part which enteric fever plays in the production of gall-stones, Moore kept the bowels free with frequent doses of castor oil, and prescribed benzoate of sodium in full doses. He also took daily 15 grains of hexamethylenamin, well diluted, for some time. The second case was one of enteric fever with epistaxis and intestinal hemorrhage. Protracted course. Convalescence complicated by "typhoid spine" which cleared up the diagnosis. Treatment consisted in rest to the spine, with massage of the back and lower limbs. The bowels were kept moving by compound cascara tablets taken as required, and for four days out of every seven a tonic mixture containing in each dose 4 minims of liquor strychnin.

Edinburgh Medical Journal

June, X, No. 6, pp. 481-576

15 Outward Projection of Retinal Images and Its Bearing on Shooting. G. A. Berry.
16 *Method of Treating Umbilical Hernia. J. H. Pringle.
17 Pressure Experienced by Fetus in Utero During Pregnancy; with Special Reference to Achondroplasia (Chondrodystrophia Fetalis). D. B. Hart.
18 Causation and Treatment of Deformities Following Anterior Poliomyelitis. B. P. Campbell.
19 Case of Amyotonia Congenita (Myotonia-Congenita of Oppenheim). D. Cotterill.
20 Linnaeus as Physician. H. M. Church.

16. **Treatment of Umbilical Hernia.**—A modified combination of the splitting and Mayo methods is employed by Pringle. A large elliptic area of skin and subcutaneous fat, including the thin skin covering the hernia, is removed. The vertical breadth of skin and fat which is to be removed is gauged by holding up the abdominal wall until the large suprapubic fold of tissue, present in all these patients, disappears; the transverse extent of the wound is anything from 10 to 16 inches. The removal of this elliptic area is generally commenced from below, and the subcutaneous fat must be removed fairly cleanly from the underlying sheath. The sac is opened close to the ring, all its loculi are emptied of their contents, which are returned into the abdomen, and the whole sac is removed. A transverse incision is then made from each lateral margin of the ring to the outer limit of each rectal sheath and the two portions above and below

this incision are dissected as two flaps off the anterior surface of the two recti muscles, the one upward, the other downward, the tissues of the stretched linea alba being split horizontally, so as to maintain the halves of the two sheaths in continuity with each other. This dissection of the two sheath flaps is to be made upward and downward sufficiently far to permit easy approximation of the inner borders of the two recti for the whole distance in which they are exposed.

One, two or three mattress sutures, according to requirements, taking a wide grip, are passed through the two recti and the posterior layer of the sheath and the peritoneum. These are drawn tight enough to approximate the two muscles, but before they are tied the now bunched up posterior sheath and peritoneum, as well as the margins of the opening "ring" through these structures, are sutured in a vertical mesial line; the mattress sutures are now tied, and then the two adjacent margins of the recti are also sutured. A series of sutures is next placed to carry and fix the cut border of the inferior flap, made from the anterior sheath of the rectus, as high up behind the upper flap as possible; and then the cut border of the upper flap is sutured over and in front of the inferior flap as far down as it will come, so that good and wide overlapping is obtained. The margins of the superficial wound are now approximated. If drainage should be considered necessary it may be from either angle of the wound or through a stab wound in the tissues of the abdominal wall just above the pubis. The patients whom Pringle has treated in this way have all done well; in spite of the free dissection and manipulation of the rectus sheath the flaps formed from it have not suffered in their vitality at all.

Glasgow Medical Journal

June, LXXIX, No. 6, pp. 401-475

21 Abdominal Incisions and Intestinal Anastomosis in Treatment of Carcinoma of Colon. A. E. Maylard.
22 Adulteration of Foodstuffs and Its Influence on Digestion. W. Watson.
23 General Practitioner's Position in Relation to Pulmonary Tuberculosis. A. Gibson.

Journal of Tropical Medicine and Hygiene, London

June 2, XVI, No. 11, pp. 161-176

24 Cell Inclusions in Leukocytes of Blackwater Fever and Other Tropical Diseases. G. C. Low and C. M. Wenyon.
25 Cultivation of *Bacillus Leprae*. H. Fraser.
26 Cirrhosis of Liver of Malarial Origin. L. Nicholls.
27 Meteorology of Malaria. M. D. O'Connell.
28 Native Treatment of Trypanosomiasis. A. Brown.

June 16, No. 12, pp. 177-192

29 Clinical Study of Malaria in Panama. J. P. Bates.

Lancet, London

June 21, I, No. 4686, pp. 1715-1786

30 Place of Climatology in Medicine. W. Gordon.
31 *Tetragenus Septicemia. J. Byers and T. Houston.
32 Intra-Abdominal Pressure in Pregnancy. R. H. Paramore.
33 *New Spirochete Found in Human Blood. H. Chambers.
34 Case of Spinal Tumor with Scoliosis; Operation. W. Harris and A. S. B. Bankart.
35 Results of Further Experience with Solid Carbon Dioxid. R. Morton.
36 Ingestion of Bacteria by Subepithelial Lymph-Nodes in Health. K. H. Digby.

31. **Tetragenus Septicemia.**—The patient was a boy between 10 and 11 years of age, who for eight years had had recurrent attacks of acute illness, which had tended to become longer, more severe and more intractable. The attacks usually began as a "cold" in the head and nasopharynx, spreading to the ear, to the lungs as a bronchopneumonia and to the intestinal tract, causing diarrhea. The attack which forms the basis of the communication by Byers and Houston commenced in December, 1912. When first seen the boy was suffering from catarrh of the nose and throat, which spread to the ears. At first he improved, but early in January a fresh attack supervened. It soon spread to the ears and became complicated by a bronchopneumonia. Bacteriologic examination at this state revealed the presence of the *Micrococcus catarrhalis*, the streptococcus and a few diplococci. A mixed autogenous vaccine of the first two organisms was then given without benefit; indeed, the patient shortly afterward became more acutely ill with pronchopneumonia and pleurisy. Futher examination of the cultures showed the presence of the *Micrococcus tetragenus*, and the same organism was recovered by examination of blood-culture. The fact that this organism was pathogenic in this case was then confirmed by opsonic index determinations. An autogenous vaccine was at once made from it and used in the treatment of the case with the best results. At a later stage a pseudodiphtheritic organism was found in the discharge from the ears and a vaccine was made from this as well.

In commenting on this interesting case, Byers points out that it illustrates the great progress made in recent years in the diagnosis and treatment of disease, since we are now enabled to make an accurate bacteriologic diagnosis in many cases which would formerly have remained obscure, and to base a rational therapy on the information so obtained. He suggests that the chronic nature of the case under consideration was probably due to a chronic infection by the *Micrococcus tetragenus* in the presence of other organisms. Houston, in commenting on the bacteriologic aspects of the case, discusses the evidence on which the causal rôle of the *Micrococcus tetragenus* was established. He also points out the difficulties encountered in demonstrating the bacteriologic cause of affections of the respiratory tract.

33. **Spirochete in Human Blood.**—In the course of a research on the pathology of exophthalmic goiter a spirochete was found by Chambers in human blood which has not been previously described as infecting the blood-stream in man. During the last nine years Chambers has examined over 500 specimens removed by surgical operation. In some of the goiter cases the thyroid showed changes which indicate a chronic inflammatory process, and it was pointed out that these inflammatory changes are similar to the effects produced in tissues by infection with the *Treponema pallidum*. In many of these goiter cases syphilis can be excluded; many attempts were, therefore, made to find evidence of the presence of some other infecting agent in the thyroid but without success. The majority of goiter specimens showing these histologic changes were from patients who had suffered from the symptoms of hyperthyroidism, i. e., they were cases of primary or secondary exophthalmic goiter. In many cases of primary exophthalmic goiter if the gland be examined carefully it is found that the changes are not uniform throughout the gland tissue. The absence of colloid and alteration in shape of the vesicles, with consequent opacity of the tissue, occur sometimes in localized areas. White nodules are found in the gland varying from the size of miliary tubercles to patches half an inch in diameter and larger, and in the center of these nodules it is common to find a collection of lymphocytes and plasma cells.

This distribution and the recognition of the fact that vesicles similar in shape to those in exophthalmic goiter are found in a thyroid inflamed as a result of injury give support to the idea that the cause for the condition is an organism which has lodged in the center of these foci. It occurred to Chambers that if this hypothesis be true the infecting agent would probably not be limited to the thyroid. There might be a general blood infection, the thyroid changes and symptoms being due to local congestion or inflammatory changes caused by such infection, a somewhat parallel condition to what occurs in trypanosomiasis. The blood from several cases of exophthalmic goiter was, therefore, examined, and a spirochaeta was found, having in all the cases the same apparent characteristics. Further examination, with somewhat improved technic, has shown, however, that this organism is extremely common in human blood, and that it occurs in almost every specimen examined, both patients and healthy people. Up to the present time the blood from twelve cases of exophthalmic goiter, from twenty patients suffering from other diseases, and from fifteen healthy people has been examined, a total of forty-seven cases, and the organism has been detected in all except three. It has been found in children as well as in adults. The organism is actively motile and is very variable both in length and thickness. The majority measure from 4 microns to 30 microns in length; very long forms are, however, met with. Some are extremely thin like the *Treponema pallidum*, others are almost as thick as typhoid bacilli.

Annales de Gynécologie et d'Obstétrique, Paris

May, XL, No. 5, pp. 257-319

37 *Malignant Chorio-Epithelioma. A. Pollosson and H. Violet.
38 *Exploratory Curetting in Diagnosis of Uterine Cancer. A. Siredey and H. Lemaire.
39 Histologic Study of Cicatrix after Cesarean Section. Audebert.

37. **Chorio-Epithelioma.**—Pollosson and Violet have compiled from the literature 238 cases of malignant syncytioma which, they say, added to Briquel's 217 cases brings to 455 the total on record. They have encountered seven cases during the last five years. In only 203 of the total cases was a preceding mole known; abortion in 135 cases; normal delivery in ninety-nine and tubal pregnancy in twelve cases. They emphasize the importance of prophylaxis by not permitting retention of placental tissue or relics of a mole, and curetting early and thoroughly when the curet is needed. They urge further systematic microscopic examination of all the scrapings; this will permit early diagnosis. In this last series of 238 cases the uterus was removed in 179 and in 114 of the previous series, with forty-two deaths in the earliest series but only seventeen deaths in the 179 cases of the latest series. Over 68 per cent. of the women recovered after the operation in the mole cases, but only about 58 per cent. in the abortion or delivery cases, and only in 33 per cent. of the tubal pregnancy cases. The better outcome in the mole cases is probably because the patients are under supervision and thus receive operative treatment earlier. In twenty-three cases there was recurrence; in six the interval was from six months to two years; they know of no case of recurrence later than this. The metastases of a chorio-epithelioma can be removed separately, consequently metastases in the vagina do not contraindicate removal of the primary focus. The urethra, bladder, rectum and vulva should be examined for metastasis and operations done accordingly, but visceral metastasis is inaccessible and hence must be regarded as a contraindication to radical treatment.

38. **The Curet in the Early Diagnosis of Uterine Cancer.**—Siredey and Lemaire have made a practice in the last few years of an exploratory curetting of the uterus on the least suspicion of cancer, and they thus detected incipient malignant disease in eight cases before there were any reliable symptoms of the cancer. In three other cases irregular hemorrhage and a red, bleeding lump on the cervix, with abdominal pain and retroflexed uterus rendered cancer almost positive in *one case* but the microscope showed ordinary metritis, and in this as in the two others of hemorrhagic inflammation the trouble proved to be non-malignant and subsided after curetting.

Archives de Médecine des Enfants, Paris

May, XVI, No. 5, pp. 321-400

40 *Iodin Sterilization of Children's Skin. Monod.
41 *Curable Meningitis in Children. J. Comby.

June, No. 6, pp. 401-480

42 Milk Powder in Infant-Feeding. (Le lait desséché dans l'alimentation du nourrisson bien portant et du nourrisson malade.) Bonnamour. Commenced in No. 5. (Les qualités que doit posséder un bon lait desséché au point de vue médicale.) C. Porcher.
43 *Recurring Purulent Pleurisy. J. Comby.

40. **Iodin Sterilization of the Skin in Children.**—Monod never noticed any by-effects in the 140 cases in which the field was prepared for the operation by painting with tincture of iodin. Nineteen of the little patients were less than 2 years old. When the operation was on the scrotum the iodin was washed off with denatured alcohol after it had dried, but in the last few months this has not been done until after the operation. C.-Boisse has recently reported two cases in which an eruption and fever resembling scarlet fever developed after the herniotomy or appendicectomy on a child. He ascribes the disturbances to injury from the iodin, but Monod thinks that the data show rather that the child happened to be coming down with scarlet fever at the time of the operation. Or possibly the cases may have been the rare affection known as surgical scarlet fever.

41. **Curable Meningitis in Children.**—Comby relates that he was called to a child of 3 apparently moribund from acute tuberculous meningitis. He remembered that he had successfully treated the child in early infancy for manifestations of inherited syphilis, and consequently he began to treat the meningitis on the same basis and all symptoms had subsided by the end of a few days. The cerebrospinal fluid in these cases is limpid, with marked lymphocytosis. He has also encountered a similar meningitis with lymphocytosis in three children with mumps. The first was a boy of 12 convalescing from mumps; there was no coma, but the other symptoms of meningitis, including lymphocytosis in the cerebrospinal fluid, were pronounced for a few days and then subsided. The onset of epidemic poliomyelitis may deceptively simulate acute meningitis, but the limpid cerebrospinal fluid shows merely lymphocytosis. Inoculation of animals with the fluid gave constantly negative results in Hutinel's eight cases of this kind. The children all recovered with some slight motor disturbances. The pains, the hyperesthesia and the absence of delirium and stupor aid in excluding tuberculous meningitis. It is probable that a more or less rudimentary form of poliomyelitis may have been responsible for the meningitis in the cases published as "recovery from tuberculous meningitis." Even a suspicion of paralysis at the time or afterward confirms this assumption. At the same time Barbier and Gougelet have recently compiled from the literature twenty-four cases of unmistakable tuberculous meningitis which terminated in recovery, although the disease recurred later in a few instances. They also have compiled a number of cases of transient, incomplete forms of tuberculous meningitis followed by apparently complete recovery. The fact that the children recovered casts a doubt on the diagnosis of tuberculosis, but one, at least, of the children has succumbed since to a new flaring up of the meningitis. The points which speak in favor of a non-tuberculous origin are the sudden onset of the meningitic symptoms, the child's liveliness, a history of some preceding infection or the prevalence of epidemic poliomyelitis. Acute encephalitis may induce symptoms of meningitis, subsiding as the encephalitis heals. Aside from this, recovery from meningitis may be anticipated only in case of some of the above curable forms with lymphocytosis.

43. **Recurring Purulent Pleurisy.**—In each of the two cases related there was apparently complete recovery from the pneumococcus pleurisy, but after an interval of two years of health the purulent pleurisy flared up again at the same point. The patients were 4 and 15 at the first attack, and had recovered very slowly under operative measures.

Bulletin de l'Académie de Médecine, Paris

June 3, LXXVII, No. 21, pp. 535-572

44 Operative Separation of Adherent Pericardium. (De la péricardiolyse dans certaines affections cardiaques ou de la thoracectomie prépéricardique.) H. Delagénière.

Journal de Médecine de Bordeaux

May 25, XLIII, No. 21, pp. 323-336

45 Tentative Non-Operative Tuberculin Treatment of Renal Tuberculosis Justifiable Only in Earliest Stages. J. Oraison.
46 Infanticide. (Du dépéçage criminel de l'enfant nouveau-né.) P. Lande.

June 1, No. 22, pp. 337-364

47 The Heart Living Outside of the Organism. (L'automatisme et la réactivité fonctionnelle du cœur en survie.) V. Pachon.
48 Fossil Man. (L'homme fossile.) G. Lalanne.
49 Treatment of Gangrene of the Lungs. Arnozan.

June 8, No. 23, pp. 365-380

50 Treatment of Lateral Curvature of the Spine. (La méthode d'Abbott pour le traitement des scolioses graves.) Codet-Boisse

June 15, No. 24, pp. 383-396

51 Freud's Method of Psycho-Analysis. A. Hesnard.

Lyon Médical, Lyons

May 18, XLV, No. 20, pp. 1061-1116

52 The Ear and Industrial Accidents. (Oreille et accidents du travail.) M. Lannois and M. Jacod.

May 25, No. 21, pp. 1117-1164

53 Pathologic Anatomy of Sclerosis in Patches. L. Bériel.

June 1, No. 22, pp. 1165-1216

54 Extraction of Foreign Bodies from the Eye. (Extraction des corps étrangers intra-oculaires non magnétiques.) Rollet.

June 8, No. 23, pp. 1217-1276

55 *Vertigo in the Tuberculous. C. Lesieur and L. Thévenot.

55. **Vertigo in the Tuberculous.**—Among 100 tuberculous patients examined by Lesieur and Thévenot fifty-five were found to be subject to attacks of vertigo. It seemed to be equally frequent in patients of all ages but more frequent in the early stages of the disease than in the later. It is generally brought on by coughing, but may also be provoked by digestive disturbances, contact with cool air or changes in position. It seems to be due to hyperexcitability of the pneumogastric nerve and its centers, which have become sensitive to the slightest irritation.

Presse Médicale, Paris

June 4, XXI, No. 46, pp. 457-464

56 Electrodiagnosis. (Loi polaire de Pflüger et électrodiagnostic.) H. Cardot and H. Laugier.

June 7, No. 47, pp. 465-476

57 Malformation of the Colon. (La stase colique par déformation des colons.) G. Lardennois.
58 The Adrenals and the Sugar in the Blood. (Capsules surrénales et glycémie.) H. Bierry.

June 11, No. 48, pp. 477-484

59 Laws of Conservation of Energy and Their Application in Chemistry. (L'énergetique générale et la chimie.) H. Guilleminot.
60 Defective Iris. (L'aniridie.) A. Cantonnet and G. Schreiber.

June 14, No. 49, pp. 485-496

61 Diagnosis of Pulmonary Disease by the Pulse. (Le Diagnostic des maladies thoraciques avant l'invention de la percussion et de l'auscultation—Le pouls.) E. Rist.
62 Hypertensive Medication. (Las éléments pharmacologiques essentiels de la médication hypertensive.) A. Martinet.

Revue de Gynécologie, Paris

XX, No. 3, pp. 225-400

63 *Primary Cancer of the Ovary. G. Massabuau and E. Etienne.

63. **Primary Cancer of the Ovary.**—Massabuau and Etienne have compiled 250 cases of solid cancer of the ovary and give a brief summary of each, discussing the outcome of treatment. In 111 of the operative cases, single ovariotomy had a mortality of 24.5 per cent. in forty-nine cases; double ovariotomy 22.22 per cent. in twenty-seven cases, while hysterectomy had only 9.09 per cent. mortality. The patients that died generally succumbed to operative shock. Of the eighty-nine who survived the operation, the fate of fifty-nine is known and all but eleven have died of recurrence. It seems necessary to remove the lymph-nodes in the lumbar region along with the ovarian cancer as they are generally involved. A simple technic for the purpose is described. Recurrence is so constant and so inaccessible that cancer of the ovary must be regarded as one of the epitheliomas with the gravest prognosis. At the same time, the occasional survivals justify radical treatment, and the outlook will certainly grow better with earlier and more extensive treatment.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

May, XXI, No. 5, pp. 129-156

64 Abuse of Hot Vaginal Douches. (De l'emploi abusif et inconsidéré des irrigations vaginales trop chaudes en gynécologie.) R. de Langenhagen.
65 Relations between Ovulation and Menstruation. P. Witas.
66 Syphilis and the Offspring. (Syphilis et nourrisson.) E. Jeanselme.
67 Post-Partum Pyelonephritis. (La pyelonéphrite des suites de couches.) C. Lepoutre.
68 Radiotherapy as Adjuvant to Surgery. S. Fabre.

Semaine Médicale, Paris

June 11, XXXIII, No. 24, pp. 277-288

69 *Diagnosis of Pneumothorax by Syringe Piston. (Nouveau procédé de diagnostic du pneumothorax.) V. Mandru.

69. **Diagnosis of Pneumothorax by Behavior of Syringe Piston.**—Mandru states that with a good aspirating syringe the vacuum in the syringe is changed when the tip is introduced into a cavity containing gas. Instead of the piston's returning to its original position, as occurs under other conditions, the piston is held back by the gas streaming into the syringe. By the immovability of the piston, therefore, it is easy to determine whether the tip of the syringe is in a pneumothorax cavity or not. His experiments with the syringe tip introduced into lung tissue showed that the air from the alveoles of the lung has never force enough to immobilize the piston as with a pneumothorax.

Berliner klinische Wochenscrift

June 9, L, No. 23, pp. 1049-1096

70 *Duodenal Ulcer. H. Küttner.
71 *Calcium in Treatment of Spasmophilia. (Untersuchungen über die therapeutisch wirksame Dosierung von Kalksalzen mit bes. Berücksichtigung der Spasmophilie.) K. Blühdorn.
72 Histologic Changes in the Tissues under Influence of Radiotherapy. (Allgemeine histologische Veränderungen der Gewebe unter dem Einfluss der Strahlenwirkung.) L. Wickham. Commenced in No. 22.
73 Heliotherapy at the Seashore. (Die Sonnenbehandlung der chirurgischen und Bronchialdrüsen-Tuberkulose an der See.) R. and F. Felten-Stoltzenberg.
74 Exercise Treatment of Little's Disease. (Uebungsbehandlung bei Little'scher Krankheit mit Hilfe einer neuen Gehstütze.) C. Hertzell.
75 Radium in Dentistry. (Mitteilungen aus der Zahnheilkunde.) Warnekros.

70. **Duodenal Ulcer.**—Summarized in Berlin Letter in The Journal May 3, 1913, page 1374.

71. **Dosage of Calcium in Treatment of Spasmophilia.**—Blühdorn reports his attempts in seventeen clinical cases and ten dispensary cases of spasmophilia to determine the most favorable dosage for the calcium salts. He was surprised to find that infants required very large doses, from 4 to 8 gm. calcium chlorid in twenty-four hours at first, the dose then gradually reduced to 2 or 3 gm. The calcium salt in the noncrystallized form proved far more effective than the crystallized. He emphasizes that the action of the calcium salt is symptomatic and transient, so that it must be kept up until all the symptoms of the spasmophilic tendency have permanently subsided except the overexcitability to electric stimuli—this cannot be permanently influenced in this way. In treatment of eczema, asthma and other affections in which benefit from calcium is anticipated, the method of large doses should be given a trial. To disguise the taste of the drug he generally prescribes it in the form of $CaCl_2$ 10 gm.; anisated water of ammonia, 2 gm.; acacia, 1 gm.; saccharin q. s., and water to 200 c.c. Of this mixture 10 c.c. is given six times a day, each dose representing 0.5 gm. $CaCl_2$. He dilutes the mixture to one-half when given by the rectum.

Deutsche medizinische Wochenschrift, Berlin

June 5, XXXIX, No. 23, pp. 1081-1128

76 The Relations between the Antitoxin Content and the Curative Action of Diphtheria Antitoxin. (Beziehungen des Antitoxingehalts des Diphtherieserums zu dessen Heilwert.) R. Kraus and S. Baecher.
77 *Tuberculosis in Children. H. Schelble.
78 Pathogenesis of Tetany in Children. F. Lust.
79 Radio-Active Substances in Treatment of Morbid Conditions in Mouth and Teeth. M. Levy.
80 Paratyphoid B. Knauth.
81 Omentum to Tie Off the Pylorus. (Umschnürung und Verschluss des Pylorus durch Netz.) Momburg.
82 Treatment of Peritonitis. (Die Rehnsche Behandlung der Peritonitis.) K. Propping.
83 Serodiagnosis of Pregnancy. (Zur klinischen Verwertbarkeit der Abderhaldenschen Schwangerschaftsreaktion—Dialysierverfahren.) W. Jonas.
84 Post-Partum Hemorrhage. (Lehren für die Desinfektion in der Geburtshilfe und für die Behandlung der Nachgeburtsblutungen an der Hand von 42 manuellen Plazentarlösungen.) C. Sievert.

85 Inversion of Puerperal Uterus. P. Alsberg.
86 Conception of Causes in Medicine. (Ueber den Ursachenbegriff in der Medizin.) H. Ribbert.

77. **Tuberculosis in Children.**—Scheible discusses the prevalence of tuberculosis in children and the difficulty of diagnosing it when located in bones or lymph-nodes and particularly when it takes the form of a subacute polyarthritis without tonsillitis or endocarditis and rebellious to the salicylates. Incipient tuberculous peritonitis is hard to differentiate from chronic digestive disturbances in children. The swelling of lymph-glands in the neck may be secondary to ordinary inflammatory processes in the mouth, tonsils or back of the neck, and if the child happens to have chronic coryza the trouble is often mislabeled "scrofula." Tuberculous meningitis may occur in infants without any of the characteristic symptoms; the skin reaction is a valuable aid in the diagnosis, as also a greater reducing capacity on the part of the cerebrospinal fluid. If the infant has given previously a positive skin reaction and then it suddenly becomes negative, this is almost a certain sign of fatal tuberculous meningitis. If the tuberculin skin reaction is negative, unless the child has an acute exanthem, the negative reaction indicates either that the child is free from tuberculosis or has been infected too recently for antibodies to have developed, or the infection is so severe that a fatal outcome is imminent. A positive reaction indicates that the child has been infected and has produced antibodies, but not whether there is actually an active tuberculous process. In very young children tuberculous infection is generally synonymous with an active process, but in older children the positive reaction should be weighed with the other findings. No other test can be compared in diagnostic efficiency and harmlessness with the Pirquet skin technic. In regard to the presence of tubercle bacilli in the blood stream, he states that none of his twenty-nine guinea-pigs developed tuberculosis after inoculation with the blood from tuberculous children, even from those with the severest bone or joint lesions. He declares that there is no evidence to date that tuberculin has really helped in the treatment of tuberculosis. Convincing proof would be afforded if it proved possible to cure with tuberculin the open tuberculosis of young children. With all other forms and conditions of tuberculosis there is always a possibility that the lesions might have healed spontaneously without the tuberculin. In tuberculin treatment of children the main point is to avoid the slightest clinically apparent general reaction. This is not an easy matter as different children react differently to the tuberculin, and consequently he advises the general practitioner to leave tuberculin alone in the treatment of children. To get the child out of the sick room, out of the haunts of the germs of influenza and measles, streptococci and pneumococci, is a great step gained, fresh air and time will complete the cure. The various forms of external tuberculosis heal best when given a year or two of time. It is amazing, he remarks, how extensive tuberculous bone processes can heal spontaneously in time. Open sores benefit by exposure to the direct sunlight, but it has little effect on deep-seated lesions. He expatiates on the importance of protecting the child during its first four years of life against bacilli-scatterers; if the bacilli-scatterers cannot be removed from the home the child must be taken away. In conclusion he emphasizes that the prophylaxis against phthisis should be centered on the child at puberty, rather than in early childhood. The main point is to cultivate a well *rounded* chest and keep the child from debilitating factors, especially too much staying indoors and too little sleep.

Medizinische Klinik, Berlin

June 1, IX, No. 22, pp. 857-894

87 Pain as Symptom of Internal Disease. O. Roth.
88 Influence of Fluctuations in Atmospheric Pressure on the Blood-Pressure. (Einfluss der täglichen Luftdruckschwankungen auf den Blutdruck.) R. Staehelin.
89 Postoperative Infection of Urinary Organs in Women. A. Bauereisen.
90 Dietetic Treatment—Milk and Fresh Strawberries—in Certain Forms of Chronic Diarrhea, Especially Indian Sprue. C. Wegele.
91 Substitutes for "Albumin Milk." (Ueber Elweissmilch-Ersatzpräparate.) W. Stoeltzner.
92 Hemorrhagic Infarct of the Testicle. (Hämorrhagische Infarcierung des Hodens.) W. Maschke.
93 Glycosuria Masked by Action of Yeast Cells in Urine; Occult Glycosuria. (Melliturie.) L. Boros.
94 Experimental Surgery of the Esophagus. F. Hohmeier and G. Magnus.

June 8, No. 23, pp. 895-938

95 *Dependence of Natural Immunity on the Nourishment. (Die Abhängigkeit der natürlichen Immunität von der Ernährung.) A. Czerny.
96 Present Status of Treatment of Syphilis. W. Pick.
97 Climate and Health Resorts. (Ueber die Grundzüge einer vergleichenden Klimatik der Kurorte.) Frankenhäuser.
98 Invagination of Intestine in Adults from Ascarides or Lipoma. F. Hohmeier.
99 Subdural Hematomas. Bertelsmann.
100 *The Changing Theories in Regard to Dietetic Treatment of Diabetes. (Neuere Gesichtspunkte in der Diätetik des Diabetes mellitus.) B. Tausz.
101 Varices and Pregnancy. R. L. Grünfeld and K. Allmeder. Commenced in No. 22.
102 Technic for Preparing Therapeutic Serums. (Ueber das Samessche Verfahren zur Herstellung eiweissarmer Seren.) W. Nebel.
103 Behavior of the Urea and Residual Nitrogen in the Blood with Nephritis. (Verhalten des Harnstoffs und des Reststickstoffs im Blute von Nephritikern.) R. Philipp.

95. **Influence of the Diet on the Resisting Power to Infections.**—Czerny's article is another illustration of the way in which practical experience leads the way and science follows along, possibly far behind, with the explanation of phenomena observed. With the explanation in hand he says we can now go systematically to work to protect children against infections, when before it was a matter of haphazard empiricism. He shows how important is the natural immunity possessed by the individual in respect to infections, and how it is possible to enhance or reduce this by the diet. The natural immunity of the human organism is its most precious possession, he declares, and it is one of the highest tasks of the medical profession to protect and cultivate further this natural immunity. Conditions in this respect are most easily studied in infants. A healthy infant does not develop thrush even if its mouth is inoculated with oidium, but if digestive disturbances arise, the oidium starts up the thrush at once. Let the digestive disturbance be corrected, and the thrush subsides without any local measures. As the infant grows older, the natural immunity increases, and the oidium does not induce thrush except in much debilitated children. The saying that "the food is responsible for the infant's being sick but that it dies from infection," must be modified, Czerny insists, by the additional statement that this occurs only with a constitutional inferiority, and that the latter is a factor in the development of the infection by its depressing influence on the natural immunity.

He discusses the different elements of the food in relation to natural immunity, the fat, carbohydrates, etc., and emphasizes that the water content of the body has extreme importance for the natural immunity. Bacteria flourish in culture mediums more luxuriantly in direct proportion to the measure in which the water content of the medium surpasses the average water content of the body of an adult. With a water content merely equal to this average or below, no colonies of the bacteria develop. The higher the water content of the body, the less the resisting power to infection, he reiterates. Carbohydrates in the diet tend to increase the water content of the tissues; the amount of increase depends on individual conditions, so that some infants and older children have to have the intake of carbohydrates more strictly regulated than others. The embryo and new-born infant have a larger water content than older children and adults, and the experiences with them illustrate forcibly the special danger of this high water content. They not only contract infections with exceptional facility, but the infection rapidly spreads from a local to a generalized process. Tubercle bacilli induce in young infants almost invariably a generalized active disease while infection as the child grows older is usually a local process.

Another factor of importance for natural immunity is the swelling of the colloid substances in the tissues; under normal conditions the calcium salts have an inhibiting and regulating influence on this swelling. If the absorption of the calcium salts from the food is prevented by too much fat in the food, then they are thrown off in the form of soaps in the stools, and the infant suffers from lack of the necessary calcium salts. This is most liable to occur on a cow's milk diet, both in infants and in older children fed too long on milk. The loss of the alkalies in this way leads to acid intoxication, the more readily the younger the child. The natural immunity is lower on a cow's milk diet than on any other food. With the exudative diathesis, in particular, the exceptionally low natural immunity can be enhanced to a practically normal phase by simply modifying the diet, reducing the milk after the first year of life to the proportion of milk usually taken by adults. His twenty years' study of the subject has shown that it is possible to control the exudative diathesis effectually by a proper diet, and thus to control the tendency to infection, so that the children very rarely contract scarlet fever, and when it occurs it is in an attenuated form. He even affirms that the frequency of the occurrence of scarlet fever and the seriousness of the disease are, generally speaking, a mirror to reflect the conditions as to the suitable or unsuitable diet given the children. The exudative diathesis, he reiterates, is a sharply defined condition of certain exudative and consecutive infectious processes in the skin and mucous membranes which are directly dependent on the diet and can be controlled at will by modifying the food, reducing the intake of milk and of fluids in general to the amounts generally taken by adults, and giving the children in their diet certain substances which they need. Experience has shown that these latter substances can be supplied to infants in maltose and to older children in meat. The recent research on beriberi has demonstrated that even minimal amounts of certain substances in the food may have a wonderful effect on the general health. In conclusion Czerny urges that some of the research now being devoted to active and passive immunization should be diverted to study of the factors governing natural immunity, especially the alimentary factors.

100. **The Changing Views in Regard to Diabetes.**—Tausz comments on the importance of determining the tolerance for albumin as well as for carbohydrates in each individual case of diabetes and, in the renal form, the tolerance for sodium chlorid also, regulating the diet in the latter case for nephritis as well as for diabetes. He is inclined to regard the success of oatmeal and vegetable days as due to their alkali content: this neutralizes the tendency to acidosis. The kations introduced with this diet have a higher catalytic power on the special ferments. He thinks that it will yet be possible to increase the production of the ferments in some way, or at least to mobilize them. The possibility of this is suggested by some certain recent experimental work; for instance, cane sugar added to dog serum remains unmodified, but if the dog a certain time before had been given an intravenous injection of 10 c.c. of a 5 per cent. solution of cane sugar, then when the sugar is added to the serum it is promptly split. This confirms the assumption that the body is able to produce protective ferments against carbohydrates, and may be led to do so at will.

Monatsschrift für Kinderheilkunde, Berlin

July, XII, No. 3, pp. 59-100

104 *Scarlet Fever and the Ear. (Scharlach und Ohr.) P. Manasse.
105 Tubercle Bacilli in the Blood of Children. (Ueber intravitale bakteriologische Bluntuntersuchungen bei Kindern.) M. Kretschmer.
106 Opium in Treatment of Children. (Verwendung von Opiaten im Kindesalter.) S. Wolff.
107 Contact Paratyphoid Infection in a Breast-Fed Infant. K. Blühdorn.
108 *Relations between Orthostatic Albuminuria and Tuberculosis. P. Reyher.

104. **The Ear in Scarlet Fever.**—Manasse expatiates on the frequency with which the ear is affected in scarlet fever. Holmgren collected a material of about 10,000 cases in ten years and among them 21.06 per cent. had ear disease. There are two forms of scarlatinal otitis. The first is a comparatively mild ordinary inflammation and has no relation to the scarlet fever except that it occurs at the same time. It is most frequent in cases with little or no throat trouble. The second type is the so-called scarlatino-diphtheritic or necrotic otitis, and is brought about by the same specific cause as the scarlet fever itself. It differs from the first type in being very much more severe and involving extensive necrosis of the soft parts and bones. While the first type generally recovers without disturbance of hearing, the second frequently becomes chronic and practically always causes some defect in hearing and often complete deafness. In order to prevent the inflammation extending from the throat to the ear, the throat should be given the greatest care. Gargles of hydrogen peroxid and similar substances are recommended and also spraying with solutions of menthol in oil. When the ear is affected, instillations of 20 per cent. boroglycerin and insufflations of boric acid are helpful or the introduction of a bit of sterile gauze into the perforation, after thorough cleansing of the middle ear. If the process involves the petrous portion, with ostitis or peri-ostitis and abscess formation, operation becomes necessary, but Manasee warns against performing an operation during the course of the scarlet fever unless it is absolutely necessary because of threatened meningitis or other intracranial complication. The inflammation may extend to the labyrinth with destruction of hearing or loss of equilibrium. Conservative treatment is advised here in preference to operation. The auditory nerve may be affected, with or without involvement of the labyrinth and middle ear. The importance of careful attention to the ear in all cases of scarlet fever is reiterated again and again.

108. **Orthostatic Albuminuria and Tuberculosis.**—Reyher believes that tuberculosis is the most important factor in the production of orthostatic albuminuria. He gives briefly the histories of twenty cases of orthostatic albuminuria in the majority of which the temperature curve, the tuberculin reaction and the roentgen examination showed tuberculosis. He cites the work that has been done showing the association of lordosis with orthostatic albuminuria; it is his impression that the albuminuria is due not to the lordosis but to the tuberculosis which caused it. His conclusions are confirmed by Lüdke and Sturm, who in 140 cases of tuberculosis in adults found 72 per cent. with orthostatic albuminuria. The percentage is larger in the first stage than in the later ones, and seems to increase after the administration of tuberculin.

Münchener medizinische Wochenschrift

June 3, LX, No. 22, pp. 1186-1240

109 *Mesothorium in Gynecology. Voigts.
110 *Hypotonicity of the Eyes in Coma. (Ueber die Verminderung des Augendrucks beim Coma diabeticum.) E. Hertel.
111 Increased Pressure in Cerebrospinal Fluid after Salvarsan. (Ueber die Hirndruckerhöhung bei Lues nach Salvarsan.) B. Spiethoff.
112 Serodiagnosis of Pregnancy (Beeinflussung des Hämoglobinkatalysators in der Schwangerschaft—Weichardtsche Reaktion.) E. Engelhorn.
113 Serodiagnosis in Psychiatry. (Serodiagnostik nach Abderhalden in der Psychiatrie.) Wegener.
114 Serodiagnosis for Differentiation of Tumors, Etc. (Ist das Dialysierverfahren Abderhaldens differentialdiagnostisch verwertbar?) E. Schiff.
115 Powder Technic for Serodiagnosis of Pregnancy. (Ueber trockenes Plazentapulver und seine Anwendung bei dem Abderhaldenschen Dialysierverfahren bezüglich der Diagnose der Schwangerschaft.) V. L. King.
116 Regeneration of Blood under Iron. (Zur Blutregeneration bei Eisenverabreichung.) R. Schmincke.
117 *Alcoholic Reflex Pupil Phenomena. R. Mees.
118 Nitrite Poisoning from Bismuth Paste. T. Jensen.
119 Diagnosis of Measles from the Blood. G. Schwaer.
120 Causes of Intestinal Invagination. L. Treplin.
121 Glattölin Used to Rub Edge of Collar as Cause of Dermatitis. J. Kohn.
122 *Clinical Importance of Lymphocytosis in Asthenia and Nervous Disease. R. v. Hoesslin. Commenced in No. 21.
123 *Emetin in Ameba Dysentery. G. Baermann and H. Heinemann. Commenced in No. 21.

109. **The New Era of Intensive Dosage in Radiotherapy in Gynecology.**—Voigts reports his experience with mesothorium, a radio-active substance similar in its properties to radium

but far cheaper, as it is derived from the monacite sand imported from Brazil to make Welsbach mantles. Its rays seem to have a greater penetrating power than the roentgen rays while it has more of the alpha and beta rays. The mesothorium rays are filtered through lead or silver 0.5 to 1 mm. thick. A twelve-hour exposure is the general rule with forty-eight-hour intervals. The mesothorium in a silver tube is introduced into the vagina or uterus or both, and the convenience of the application directly at the site of the trouble renders it a useful substitute for roentgenotherapy. No changes were found in the sound tissues suggesting permanent injury from the radiation after the present technic of filtration had been adopted. Voigts reports seven cases of climacteric hemorrhage, all promptly cured, as also three patients with hemorrhage from diseased adnexa; in six cases of metritic hemorrhage the patients were cured although with some difficulty. No benefit was realized in two of the eight cases of myoma. In his first three cases an unduly long exposure without suitable filter led to a deep burn in the vagina that took three months to heal. The exposure induced collapse in another case, and in another there was exudation in the pouch of Douglas.

110. **Reduction in the Intra-Ocular Pressure in Diabetic Coma.**—Hertel has succeeded in causing a marked reduction in the intra-ocular pressure in animals by varying the food and by intravenous injection of various substances which modified the molecular concentration of the blood. This remarkable change in the intra-ocular pressure is independent of the general blood-pressure, and it can be due only to changes in the processes of osmosis. The research was undertaken to seek an explanation for the remarkable drop in intra-ocular pressure in the course of diabetic coma to which Krause and Heine called attention and suggested its differential importance in coma of different origins.

117. **Alcoholic Reflex Pupil Phenomena.**—Mees reports a case which shows that abuse of alcohol may induce a syndrome deceptively simulating tabes dorsalis, even to the reflex behavior of the pupils. Serodiagnosis may be the only means to distinguish between true tabes and this alcoholic pseudotabes. He is convinced that the oftener the serum tests are applied the more numerous will become the cases of pure alcohol reflex rigidity of the pupil. The importance of differentiation for treatment is obvious, and it confirms anew the frequent practical importance of many questions at first supposed to be of purely abstract scientific nature.

122. **Lymphocytosis as an Index of the Lymphatic Constitution.**—Hoesslin has been classifying all his cases in the last two years in which there was manifest lymphocytosis, restricting this term to the fields in which there were thirty or more lymphocytes to each 100 leukocytes. He found 100 patients with this lymphocytosis, absolute in seventy-one cases, that is, with more than 2,000 lymphocytes to the cubic millimeter. The blood findings were kept under frequent control; when there was no treatment the lymphocytosis usually persisted unmodified during months. This high lymphocytosis occurred almost exclusively in patients with diabetes, obesity, exophthalmic goiter, neuropathies, asthenia or various neuroses. Analysis of the cases demonstrated that the lymphocytosis is a manifestation of functional disturbance in the lymphatic system, chiefly of the thymus and the ductless glands. His research indicates further that asthenia and other affections of the nervous system are directly traceable to the lymphatic constitution or the status thymicolymphaticus with involvement of the glands with an internal secretion. There seems to be an inherited constitutional inferiority on the part of the glands with an internal secretion. This conception throws light on the connection between the various diatheses. He remarks in conclusion that the favorable action of arsenic in many neuropathic conditions is due to its influence on the lymphatic system, combating the neutrophile leukopeny and the lymphocytosis. One argument in favor of this view is the inefficacy of iron in the so-called pseudo-anemia of the neuropathic, in which arsenic is often surprisingly successful. The lymphocytosis persists unmodified by the iron while under arsenic conditions return to approximately normal. This revolutionary conception that neuropathic conditions are not the result of a primary affection of the nervous system but rather of the lymphatic system brings a revolution in treatment, as our measures henceforth will be directed against the abnormal functioning of the glands with an internal secretion and the lymphatic system in general.

123. **Emetin in Amebic Dysentery.**—Baermann writes from Sumatra to extol the efficacy of emetin in treatment of amebic dysentery as he has used it in twenty-two cases. In six cases the old dysentery had induced such irreparable changes in the mucosa of the colon and such impairment of the general health that it was impossible to arrest the fatal termination, but the autopsy revealed that the processes in the intestines must have started to heal at once under the emetin, as the ulcerations, etc., were either entirely healed or well on the way toward healing, and in three cases no amebas could be discovered. In three others an occasional, isolated ameba was found. In the clinically cured cases also an occasional ameba is passed in the stool; probably these surviving amebas were ensconced at some point not accessible to the blood-stream and the amebas thus escaped the action of the emetin, or they may belong to a strain refractory to emetin. It was found most effectual in one or two intravenous or subcutaneous injections of 150 or 200 mg., followed by four or five subcutaneous injections of 100 or 120 mg. at two or three day intervals. This supplementary course should be repeated at intervals of three or four weeks. Supervision of the stools is indispensable, kept up for months. The intravenous maximal dose is 250 mg. per 60 kg. body weight. Different lots of emetin varied in their efficacy. The rapid improvement in the first two or three days must be due to the astringent action of the emetin, as the ulcerations cannot heal in this time. The results on the whole were less brilliant than those of Rogers—even with emetin obtained directly from him.

Petersburger medizinische Zeitschrift

May 28, XXXVIII, No. 10, pp. 112-127

124 Recent Progress in Treatment of Cancer. (Fortschritte der Krebsbehandlung.) F. Weber.
125 Treatment of Ozena. (Zur Ozaenafrage.) W. v. Reyher.

Therapie der Gegenwart, Berlin

June, LIV, No. 6, pp. 241-288

126 *Present Status of Hyperemia Treatment. E. Joseph.
127 *Vaccine Therapy of Cancer. (Behandlung von Krebskranken mit Vaccination.) C. Lewin.
128 Treatment of Contracted Flat-Foot. (Zur Behandlung des contracten Plattfusses.) G. Müller.

126. **Present Status of Hyperemia Treatment.**—Joseph remarks that the poultice, the hot sand bag and similar long-tried measures owe their efficacy to the hyperemia which they induce and the benefit is proportional to the way in which they conform to the principles which Bier has found the secret of success in his methods of passive and active hyperemia treatment. The hyperemia has a curative influence only when it is the local concentration *of healthy* blood; hence measures to improve the state of the blood as a whole may be included in the term "hyperemia treatment." Joseph discusses the technic for the various methods of inducing hyperemia, reiterating that the limb to which the constricting band is applied to induce local hyperemia must always feel as warm, if not warmer, than its mate. If the limb grows cold this is a sign that the blood is being shut off from the limb instead of collecting in it, and thus the opposite of the desired effect is realized. With small, peripheral infectious processes it is sometimes better to apply a second constricting band close to the lesion, in addition to the one higher up on the limb, as the hyperemia induced by the latter grows less and less toward the periphery so that the lesion may escape its effect unless reenforced by a second, looser, constricting band closer to it. [*The technic has been described in these columns a number of times, as* 1910, lv, 25 and 1908, l, 840.] The earlier the hyperemia treatment is begun the

better the outcome. In constitutional diseases the blood as a whole is so poor that little can be hoped from it; with nephritis it is liable to increase the tendency to dropsy. Mild diabetes is not a contra-indication, but diabetic furuncles and carbuncles require great caution. The suction cup should be large enough to rest everywhere on sound tissue. Here as in all cases, the suction must never be strong enough to aspirate blood. Arteriosclerosis as a rule need not be regarded as a contra-indication, but nervous diseases, tabes, alcoholism, etc., render the application of hyperemia treatment extremely difficult as the disturbances in sensation deprive us of this useful guide. When the blood has been injured beyond repair by sepsis, hyperemia treatment is hopeless, but a sudden transient invasion of the blood and comparatively benign pyemic metastases are exceptionally amenable to it. Pyemic joint affections are the banner field for it, Joseph declares. He regards the appetite and ability to sleep as the only means at our disposal to differentiate between the hopeless and the favorable types of sepsis. The fever may be alike in both forms. The finding of streptococci or staphylococci in the freshly voided urine suggests metastatic pus foci in the kidney, but even then the hyperemia technic may be applied for a brief trial. If the proper reaction, namely, warm edema, does not follow, the attempt had better be abandoned at once, as also under any conditions when there is progressive necrosis. Hyperemia treatment requires skill and patience and it should not be attempted for insignificant lesions which heal without it. But it far surpasses all other methods, he insists, in treatment of recent joint affections of gonorrheal origin and for all recent, severe, infected or suspicious injuries and wounds. No physician skilled in the technic would be willing to do without it now in treatment of tendon sheath phlegmons, mastitis, furuncles on the face, and carbuncles, etc. Tuberculous lesions may require it to be kept up for years to be finally successful, and consequently it is foolish to commence it with persons who are unable to devote the necessary time to it. For tuberculous joint lesions the constricting band should be applied for two hours a day, drawn just tight enough to induce considerable edema, with possibly a slight livid aspect of the limb. No pain should ever be caused by the constriction; the prompt relief of existing pain is one of the great advantages of the method. Tuberculous abscesses should be punctured and the contents aspirated with a vacuum cup, suction hyperemia being maintained in this way, with intermissions, up to a total of thirty minutes a day, until the abscess has entirely healed over; the constricting band for passive hyperemia can be continued at the same time for two hours a day. The method is best adapted for the hand, foot and elbow; the shoulder is less favorable for it and it cannot be applied to the hip joint at all. Lesions in the testicles and epididymis are also amenable to this treatment. In conclusion Joseph endorses Bier's recent statements in regard to the great advantage of giving internally from 1 to 8 gm. of sodium iodid a day to supplement the local hyperemia. This wards off development of cold abscesses.

127. **Autoserotherapy of Cancer.**—Lewin has only two cases to report, but the results were so extraordinarily good with these that he urges others to treat patients with ascites from carcinosis by reinjection of 10 c.c. of their own ascitic fluid after tapping. One of his patients, a woman of 57, seemed to have less than a month to live when he first saw her, but under this autoserotherapy she was *apparently* cured and survived in comparatively good health for eighteen months after her dismissal. First one breast and then the other had had to be amputated for recurring carcinoma and during the three months following she had to be tapped a number of times. Each time 10 c.c. of the fluid was reinjected into the subcutaneous tissue before the needle was withdrawn The other patient was a woman of 46 with metastatic nodules in the remaining breast. She was given five injections of 10 c.c. each of an autolysate of cancer cells, supplemented by potassium iodid (on account of the positive Wassermann reaction). The recurring nodules gradually disappeared so that the woman for a year has been comparatively well to date. Lewin thinks that there is a future for this autoserotherapy or autovaccination, especially as an adjuvant to radiotherapy or other measures.

Wiener klinische Wochenschrift, Vienna

June 5, XXVI, No. 23, pp. 917-960

129 Simplicity in First Aid. (Grundzüge und Vorschläge zur Vereinheitlichung des ersten Wundverbandes.) A. v. Eiselsberg.
130 Reliability of Serodiagnosis of Pregnancy. (Zur Serodiagnostik der Schwangerschaft.) K. Jaworski and Z. Szymanowski.
131 Salvarsan Fever. (*Experimentelle und klinische Analyse des Salvarsanfiebers.*) F. Luithlen and V. Mucha.
132 Phimosis. (Operation der hypertrophischen Phimose.) P. Albrecht.
133 Successful Operation for Embolus in Femoral Artery. E. Key.
134 Treatment of Abortions in Vienna Hospitals. (Poliklinische Abortusbehandlung.) E. Hofmokl.

Zeitschrift für Kinderheilhunde, Berlin

VIII, No. 1, pp. 1-110. Last indexed July 12, p. 158

135 *Dietetic Treatment of Eczema in Children. H. Finkelstein.
136 Test for Human Milk. (Neue Methode zur Unterscheidung von Frauenmilch zum Studium des lipolytischen Milchferments.) H. Davidsohn.
137 The Phosphates in the Urine of Bottle-Fed Infants. G. Kaminer and E. Mayerhofer.
138 Fluctuations in Albumin Content and Electric Conductibility of Infants' Blood. O. Hagner.
139 Agglutination of Colon Bacilli Has No Diagnostic Significance *in Infant Pathology.* H. Zeiss.
140 Post-Diphtheric Hemiplegia. W. L. Leede.

135. **Dietetic Treatment of Eczema in Infants and Older Children.**—Pediatrists formerly held that eczema was almost always benefited by a restricted diet. Finkelstein believes that this is a mistake, and that there are many cases in which restriction in diet is not only not helpful, but directly harmful. He reports two cases showing bad results under limited diet and improvement on a more generous diet.

Zeitschrift für klinische Medizin, Berlin

LXXVII, Nos. 5-6, pp. 355-533. Last indexed May 31, p. 1753

141 Aspect of First Beginnings of Incipient Cancer in Lower Intestine. (Die ersten Anfänge der atypischen Neubildung im *Rektum und im S Romanum.*) W. Libensky.
142 Diabetes. (Zur Diabetesfrage.) H. Pribram and J. Löwy.
143 Affinity of Thorium for Organs. (Zur Kenntnis der Organotropie von Thorium X und Thorium B.) W. Metzener.
144 Biologic Research on Thorium. (Experimentelle Untersuchungen über die biologische Wirkung des Thorium X, nebst Beobachtungen über seinen Einfluss auf Tier- und Menschentumoren.) H. Hirschfeld and S. Meidner.
145 Physical Examination of Athletes in Competitive Events. (Untersuchungen an Sportsleuten.) Külbs and M. Brustmann.
146 The Carbon Dioxid Tension of the Blood in Dyspnea of Cardiac or Pulmonary Origin and in Kidney Disease. (Ueber die Kohlensäurespannung des Blutes im pathologischen Zuständen. II and III.) O. Porges, A. Leimdörfer and E. Markovici.
147 *Treatment of Obesity from Standpoint of Metabolism of Minerals. (Untersuchungen über den Mineralstoffwechsel. I.) K. Birkner and R. Berg.

147. **Treatment of Obesity from Standpoint of Metabolism of Minerals.**—Birkner and Berg conclude their long monograph with the statement that in treatment of obesity, far more than under normal conditions, it is necessary for the food to contain a natural surplus of inorganic bases over inorganic acids. Unless this is the case, the patients' resisting powers will be materially reduced, the heart and circulation suffering most. The minute details of the entire mineral metabolism in several cases of obesity are *tabulated for comparison* with the minute details of the diet. They illustrate the importance of such apparent trifles as the eating of 14 gm. less meat a day in one case; this was enough to upset the balance between the bases and acids. When there is an excessive intake of acids and the emunctories can or do not throw them off at once, they seem to become transformed into amino compounds and are stored up somewhere in the body. When the diet becomes rational again, these stored-up deposits are thrown off, but it may be some time before they are all eliminated. Any attempt to neutralize these stored up acids by ingestion of bases is dangerous, as the trouble is

not the lack of bases, but in the impossibility of the intestines and kidneys eliminating such large amounts of the big molecule compounds. The food should contain more equivalents of inorganic bases than acids. A surplus of bases is found in fruits, nuts, milk, etc.; a surplus of acids is found in meat, bread, beans, etc. The tables show that 100 gm. of the acid-carriers requires 200 or 300 gm. of the base-carriers to balance. These fundamental laws must be taken into account in treatment of obesity, at least, or the patient's heart and general health will suffer materially as is shown by concrete examples.

Zeitschrift für Urologie, Berlin

July, VII, No. 6, pp. 429-534

148 *Supernumerary Ureters. (Zur Kasuistik und operativen Behandlung überzähliger aberranter Ureteren.) J. Hartmann.
149 *Staphylococcus Infection of the Urinary Passages. (Die Sonderstellung der Staphylomykosen der Harnwege.) B. Goldberg.
150 Case of General Gonorrheal Infection. (Muskelatrophie, Muskelrheumatismus, Arthritis, Keratosis der Fussohlen bei einem gonorrhöischen Patienten.) I. F. Selenew.

148. **Supernumerary Ureters.**—Hartmann reports a case which brings to twenty or twenty-five the total on record. The symptoms caused by a supernumerary and aberrant ureter are a typical incontinence coexisting with nórmal micturition, although incontinence is not inevitable in these cases. Some of the patients had been treated in various ways to cure their "bad habit of enuresis"; others were treated for weakness of the sphincters. In one case, only the microscope revealed the minute opening below the urethra through which the droplets of urine oozed. Hartmann's patient was a robust primipara of 33 who had been treated for her incontinence by various physicians since early childhood; none before had discovered the hair-fine opening close below the orifice of the urethra. A stain injected into the minute fistula did not tint the urine in the bladder. and an incision in the vagina showed that the ureter ran to the right kidney. He cut out the lower dilated segment and implanted the central stump of the ureter in the bladder wall, by Franz' method, restoring approximately normal conditions.

149. **Staphylococcus Infection of the Urinary Apparatus.**—Goldberg comments on the easy curability of staphylococcus infection of the urinary passages, and hence its brief duration as a rule. Chronic staphylococcus infection is rare; when it occurs it is generally secondary to a chronic excessive proportion of phosphates in the urine. Albuminuria is generally the first and a persisting sign of staphylococcus infection. After gonorrhea, all forms of staphylococcus infection are liable to develop. If the staphylococci in the urinary passages invade the kidneys and blood, the resulting sepsis is peculiarly dangerous, as he shows by summaries of seven cases. Otten had 80 per cent. of his twenty-two patients in this category die, and Bertelsmann had a mortality of 70 per cent. Goldberg compares ten cases of staphylococcus infection of the urinary passages from his own experience with a large number on record. His first four cases began with a sudden onset; tenesmus and pain at micturition, the desire to urinate returning every fifteen minutes, the urine scanty and turbid, containing epithelial cells, cocci, and up to two per thousand albumin. Under prompt internal and local treatment, the cure was soon complete.

Zentralblatt für Chirurgie, Leipsic

June 14, XL, No. 24, pp. 945-992

151 Technic for Steinmann's Nail Extension. D. Kulenkampff.
152 Amputation of Rectum with Exclusion of Pelvic Colon. G. Kelling.
153 Fascia Flap as Cap in Resection of the Liver. (Ein neues Verfahren für ausgedehnte Leberresektionen mit Anwendung der freien Fascientransplantation.) P. Kornew and W. Schaack.

Zentralblatt für Gynäkologie, Leipsic

June 14, XXXVII, No. 24, pp. 877-916

154 Repeated Extra-Uterine Pregnancy. L. v. Lingen.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 22, XXXIV, No. 61, pp. 639-646

155 Edema of the Lids as Sign of Maxillary Sinusitis, etc. (L'edema delle palpebre.) G. Di Tito.

June 1, No. 65, pp. 679-694

156 Changes in the Blood of Gravid Rabbits. (Alcune osservavazioni ematologiche su coniglie gravide.) A. Rossi.

June 3, No. 66, pp. 695-702

157 Transvesical Prostatectomy; Nine Cases. (Guarigione secondaria immediata della cistotomia prostatectomia transvescicale.) G. Giovannetti.

June 5, No. 67, pp. 703-710

158 Operative Treatment of Abortion. F. Marinelli.

June 8, No. 68, pp. 711-726

159 "Determining" Action of Certain Crystalloid Substances. N. Barbaro.

June 10, No. 69, pp. 727-734

160 Serodiagnosis of Pregnancy. G. A. Pari.

June 12, No. 70, pp. 735-742

161 Ileus from Volvulus in Hernia. (Sull'occlusione intestinale da volvolo in sacco erniario.) G. Marangoni.

Policlinico, Rome

June 8, XX, No. 23, pp. 805-840

162 *Etiology of Pellagra. (Contributo nuovo alla etiologia e patogenesi della pellagra.) G. Alessandrini and A. Scala.

June, Surgical Section No. 6, pp. 241-288

163 Localization of Foreign Bodies by Roentgenoscopy. (Sull'esatta posizione dei corpi estranei nel corpo umano. Nota die Röntgen-tecnica.) I. Schincaglia.
164 Invagination of the Intestine. L. Vaccari.
165 The Internal Secretion of the Testicles. (Ulteriori ricerche sulla secrezione interna testicolare.) A. Marrassini.

June, Medical Section No. 6, pp. 243-288

166 Serotherapy of Anemia with Serum Taken after Venesection. (Il valore ematopoietico del siero di animali anemizzati col salasso.) R. Massalongo and U. Gasperini.
167 Electricity in Treatment of Chlorosis. (Azione curativa della elettricita statica nella clorosi.) F. Ghilarducci.
168 The Resisting Powers of the Red Corpuscles in Anemia and Jaundice. (La resistenza delle emazie negli stati anemici e itterici.) G. Paoloni.
169 Serodiagnosis of Cancer. (Del valore della deviazione del complemento secondo v. Dungern nella diagnosi delle neoformazioni maligne.) B. E. Anselmi.

162. **Pellagra the Result of Chronic Intoxication from Drinking Water.**—Alessandrini and Scala have abandoned the idea that pellagra is of parasitic origin, and relate here that extensive experiments on rabbits, guinea-pigs, dogs and monkeys, conducted at the Institute of Experimental Hygiene at Rome, have apparently confirmed the assumption that the silica in colloidal solution in the drinking water is the cause of pellagra. All drinking waters contain more or less silica, but it is neutralized by the alkaline salts present in the water, and only where the salts are not present in adequate amounts is there danger of pellagra. In their experiments, sodium and calcium carbonates preserved the animals from any injurious influence from the colloidal silica while calcium chlorid aggravated the injurious influence. The silica exerts its nefarious action mainly, they state, by causing the fixation of sodium chlorid in the tissues. This in turn leads to excessive amounts of free hydrochloric acid. This induces reactions of defense which cause the symptoms we call pellagra. This disease is consequently, they affirm, an intoxication with mineral acids. The symptoms are the manifestation of the reactions between the retained sodium chlorid and the proteic elements of the tissues. The action of the mineral acids is most intense on the tissues exposed to the sun and air. The practical results of the research reported are the assumption that pellagra can be prevented and favorably influenced by treatment with an alkali. They gave nine pellagrins daily injections of a 5 or 10 per cent. solution of trisodium citrate and the results were highly satisfactory. All had the disease in a pronounced and old, chronic form and all gained in weight and strength while there were no further digestive disturbances or dizziness although no change was made in their habits of life, food or occupation. Dogs treated in the same manner, after the experimental pellagra was under way, recovered apparently normal health, the urine

returning to normal in sixteen days. Alessandrini and Scala suggest that the addition of minute pebbles of calcium carbonate to the sources of the water in pellagra districts would restore the proper balance and put an end to the excess of colloidal silica. This measure has already been applied empirically in some districts with excellent results, small limestone pebbles being used as a filter for the water without knowledge of the specific chemical action of the calcium carbonate on the silica.

Riforma Medica, Naples

May 24, XXIX, No. 21, pp. 561-588

170 Reflex Phenomena with Spinal Cord Disease. (Riflesso di retrazione dell'arto inferiore e riflesso di allungamento crociato.) G. Rosenda.
171 Epitheliomas of Male Mamma; Four Cases. V. Simeoni. Commenced in No. 20.
172 Colpocystotomy. O. Marchetti.

May 31, No. 22, pp. 589-616

173 Previously Undescribed Gland in Thymus *Region* with an Internal Secretion. (Sull'esistanza di *una nuova glandola a* secrezione interna.) N. Pende.
174 Tuberculous Processes in the Cecum. (Sulla tubercolosi ipertrofica del ceco.) G. Monzardo.
175 Bradycardia in Mumps. (Sul polso raro nella parotite epidemica.) E. Grande.

Brazil-Medico, Rio de Janeiro

May 8, XXVII, No. 18, pp. 171-180

176 Madura Foot: Two Cases. J. Maciel and N. Leite.
177 Gonorrheal Joint Disease. (Nota sobre o rheumatismo blenorrhagico.) A. Pereira.

May 15, No. 19, pp. 181-190

178 Diagnosis by the Blood in Tropical Diseases. (Hemodiagnostico nos tropicos.) J. A. G. Froes. Commenced in No. 18.

May 22, No. 20, pp. 191-202

179 *Epidemic of Attenuated Small-Pox? (Epidemia de alastrim no municipio de Ponte Nova.) P. Palermo.

179. **Attenuated Small-Pox?**—Palermo describes an epidemic of what he calls "alastrim." This term is derived from the Portuguese word meaning "to spread," as the way in which this disease spreads seems to be its most remarkable feature. Last August it invaded the town of Ponte Nova, appearing at several points at once and sweeping like a prairie fire from the outskirts toward the center, but not invading the center. that is, the homes of the well-to-do. Before long there were 3,000 cases; the eruption resembled in nearly every respect that of small-pox except that the pustules developed in various crops. The disease was never known in the region until three or four years ago, when there were a few cases. He describes the disease as the most benign of all the infectious diseases as there was not a death due directly to it and the general health was scarcely impaired. Although covered with confluent pustules many of the sick continued at their ordinary occupations. Palermo gives a number of reasons why the disease cannot be regarded as merely an attenuated form of small-pox but is in fact a distinct morbid entity. There was no fever except in a few rare cases during the suppuration stage, and then the fever was slight and brief, never proportional to the intensity of the eruption. The disease leaves pitting, and vaccination against small-pox protects against alastrim. He states that in Rio in 1908 the alastrim appeared in epidemic form along with variola. Another argument against the identity of alastrim and variola is that the alastrim renders the individual non-susceptible to vaccination for only a very short period. The disease has never appeared except in the winter season, and the epidemics have been arrested only by wholesale vaccination. He gives illustrations and temperature charts in several cases.

Semana Medica, Buenos Aires

April 24, XX, No. 17, pp. 965-1020

180 Gradual Dilatation up to Large Catheters in Treatment of Dacryocystitis. J. M. Zubizarreta.
181 Artificial Plasmogenesis. V. Delfino.
182 Sulphuric Acid. (Apuntes de quimica.) V. Delfino.
183 *Cesarean Section by Small Supra-Umbilical Median Incision. (La operacion cesarea por el metodo del Doctor A. B. Davis.) S. G. Mu[illegible]uz.

May 1, No. 18, pp. 1021-1076

184 *Tuberculin Treatment of Pulmonary Tuberculosis. S. E. Bermann.
185 Composition of Matter. (Las modernas ideas acerca de la constitucion de la materia.) V. Delfino.
186 Medicolegal Examination of Blood-Stains. (La diascopia de las huellas de sangre.) A. de Dominicis.

May 8, No. 19, pp. 1077-1132

187 *Influence of Mountain Climate on the Blood. (La hiperglobulia de las altitudes no es un fenomeno de hematopoyesis.) D. V. Lope.
188 The Granules in the Tubercle Bacilli. (Algunas granulaciones del bacilo de la tuberculosis revelables por el metodo de Romanowsky-Giemsa.) F. Mas.

183. **Davis' Technic for Cesarean Section.**—Marruz calls the attention of his South American confrères to the fine results obtained at the New York Lying-In Hospital since A. B. Davis in 1903 adopted the method of a small incision above the umbilicus on the median line for access to the uterus. This technic was applied with excellent results in 135 of the 147 cases of cesarean section between 1903 and 1912. The cicatrix ruptured later in only one case, during a protracted delivery, and a second prompt cesarean section brought both woman and child out of danger. He expatiates on the avantages of this technic, especially the distance between the wound in the wall of the abdomen and in the wall of the uterus, each thus healing separately without danger of adhesions, and without interfering with the normal involution of the uterus. As no attempt is made to bring the uterus outside, the danger of shock is correspondingly lessened, as also the hemorrhage; the woman sometimes loses less blood than with an ordinary delivery. The tendency to hemorrhage is counteracted by the traction from above in extracting the child.

184. **Tuberculin Treatment of Pulmonary Tuberculosis.**—Bermann gives a detailed report of seven typical cases in which tuberculin was systematically used, emphasizing the important aid it afforded when the system was still capable of the slight stimulating reaction which alone renders tuberculin effectual. He advises not to permit any evident clinical reaction, keeping the doses, concentration and intervals at the point below that of inducing a clinical reaction. The tuberculin is most effectual in the incipient cases and in those with a torpid evolution or standing still, without fever, and the general condition still good. There need be no fear of untoward by-effects in these classes of cases. It is of great assistance to have the patient prepared by a course of hygiene and dieting before starting the tuberculin; the best results are attained when the patient can have the benefit of sanatorium treatment with the tuberculin; when this is not possible the physician must be stricter in picking out cases in which to give the patient the benefit of the tuberculin.

187. **Effect of Mountain Climate on the Blood.**—Vergara Lope quotes from a number of writers and cites his own experiences, all of which seem to show that the dry rarefied air of the mountains dries out the blood so that the apparent increase in the number of corpuscles is merely a matter of greater concentration; there is no special production of blood under these circumstances. On the high tableland of Mexico he found from 6,000,000 to 6,500,000 reds in the blood of adults and only a little less in pregnant women, while at still higher altitudes Viault found 8,000,000 (at Morococha, altitude 4,392 meters, over 12,000 feet). The amount of oxygen absorbed by the blood of animals exposed to a rarefied atmosphere in an air cabinet (Regnard) was 25 per cent. more than in the control animals under ordinary atmospheric pressure.

Upsala Läkareförenings Förhandlingar

XVIII, No. 4, pp. 191-269. Last indexed April 12, pp. 1198

189 Visualization of Movements. (Ges det visuella rörelseförnimmelser?) H. Ohrvall.
190 *Rupture of Spleen from Contusion. (Om subkutana traumatiska mjälrupturer och deras behandling.) L. Norrlin.
191 Technic for Artificial Pneumothorax. (En kanyl för anläggande af pneumothorax.) E. Lindhagen.
192 Tests for Color Blindness. (Holmgrens sefirgarnsmetod och pröfningen af järnvägspersonaleus färgsinne.) G. F. Göthlin.

190. Summarized in The Journal July 12, page 150.

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TUMOR OF THE HYPOPHYSIS IN A CASE OF ACROMEGALY [*]

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The importance to health of the integrity of the pituitary gland is now unquestioned. Experimentalists and clinicians are busy elucidating its physiology and pathology, in order that rules may be formulated for the diagnosis and treatment of its various disorders. Meanwhile surgeons are perfecting new practical methods of approach to the hidden gland at the base of the brain, thus robbing hypophysectomy of many of its dangers. The literature of the past few years has been enriched by a number of valuable articles and monographs on the theoretical and practical aspects of hypophyseal disorders, which must be consulted by those wishing to get a general view of the subject. My contribution is the report of a case of acromegaly with post-mortem findings, which I had the privilege of studying for about seven years. I shall attempt, if possible, to correlate the features of this case with the latter-day teachings on the hypophysis.

REPORT OF CASE

History.—The patient, a Canadian lake captain, 49 years old and unmarried, was first seen in September, 1903. Father died of some lung-trouble at 71; the health history of other members on this side of the family is unknown. The mother, in good health at 79 years, stated that her parents died at 82 and 85 respectively; a sister had a "stroke" at 70 and died several years later; her other children are healthy and she never knew of any nervous diseases in her entire family. Birth and early physical and mental development of patient were normal. With the exception of an attack of tonsillitis when 2 years old and of two attacks of lumbago during adolescence, there were no complaints previous to the present trouble. He always had good habits: never smoked nor drank to excess. Though sexually moderate, he did not escape a mild case of gonorrhea and, later, a chancroid with bubo; but he never acquired syphilis. During his boyhood and early adolescence he was tall and slim. Figure 1 shows him at 35. At this time he was still within normal proportions with reference to height and weight. Soon after this picture was obtained, however, he began to gain in weight, and we discover in him the fully-developed acromegaly type at the age of 44 (Fig. 2).

Present Complaint.—At my first examination the family were agreed that the disease had not lasted over eight years. The patient placed much emphasis on two incidents which occurred shortly before the development of his symptoms, and he holds these responsible for his troubles. First, during a stormy voyage on the lake he was overtaken by fright and confusion of such nature that he was obliged to yield the command of the vessel to his first officer. The second incident which he regards as the principal cause of his disease was an infected vaccination wound on his left arm, from which he suffered in 1894. Shortly after the infection had subsided, he noticed peculiar nervous "spells," during which he held his breath and snored for a few seconds; there was said to have been some discoloration of the lips, but no frothing at the mouth during these attacks. Consciousness was never lost during any of the seizures. In the autumn of 1894 the attacks changed in character, not only motor, but also sensory and vasomotor phenomena occurring; added to the snoring and pause in respiration there developed "creepy," chilly feelings, followed by hot flushes and sweatings. Occurring at long intervals in the beginning, the "spells became more frequent later, until toward 1897 major attacks of epilepsy also made their appearance. During a period of seven months, in 1895, the patient found himself in a condition of physical and mental inertia. He was somnolent, apathetic, could not recognize familiar objects and persons and was unable to attend his natural wants. Slowly he emerged from this lethargy; he began to take short walks in the open and to care once more for his person. At this time and subsequently an insignificant physical or mental effort was usually sufficient to bring on a state of exhaustion. In 1896 many nervous spells of the variety already described occurred, which were modified to the extent that each attack was either followed or initiated by a smacking of lips and trembling of face, usually accompanied by a lacrymose outcry of "Oh my, oh my!" In 1897 the first major attack of epilepsy was noticed; there was the short tonic, followed by a longer clonic convulsion, with frothing at the mouth, biting of the tongue, and complete relaxation of the vesical sphincter. Similar attacks continued to recur mostly during the early morning hours. They were always preceded by "creepy," chilly feelings in the fingers; often, however, the latter constituted the entire attack, which then terminated by yawning and profuse perspiration, but without convulsions. A prominent symptom was severe headaches, which have occurred at irregular intervals since the lake accident—for the patient the beginning of his disease. Very intense at first, the cephalalgias became less severe and less frequent toward the end.

Physical Examination.—Patient is about 6 feet tall, presents a clumsy posture and a gait betokening lack of energy. His face is coarse and large, the lower jaw massive and protruding beyond the upper; the lips and nose are thick, the nasolabial folds accentuated. The eyes are deeply set, eyebrows coarse, and supra-orbital arches prominent. While the lower portion of the forehead bulges out considerably, the upper end appears to be retreating; the malar bones are large. The fingers are sausage-shaped and the hands resemble a spade, all the tissues—bones, muscle, fat and skin—being excessively developed. The feet show similar excess in the growth of both soft and osseous structures. Kyphosis is marked in the cervicodorsal region. Both clavicles and the sternum are considerably enlarged. The genitals are undersized and the libido and sexual power are absent. Except for the heart, which shows slight tachycardia, the viscera are normal. The voice is low-pitched, the speech slow, gutteral and monotonous. The tongue, indented by the teeth, is extremely large and fills the mouth almost completely, thereby exciting an increased flow of saliva. The thyroid is not palpable.

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[*] Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

At various times early in my observation I found in the urine phosphates, urates and traces of sugar, but no albumin. Somewhat later I failed to detect sugar, and discovered the phosphates only occasionally. Polyuria, polydipsia and polyphagia were symptoms more or less present during the entire course of the disease. A blood examination revealed nothing beyond a slight secondary anemia.

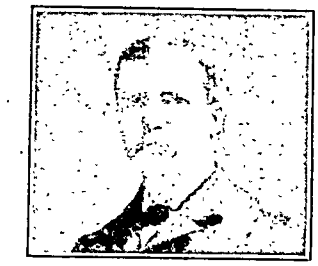

Fig. 1.—Patient at 35, still within the normal growth proportions.

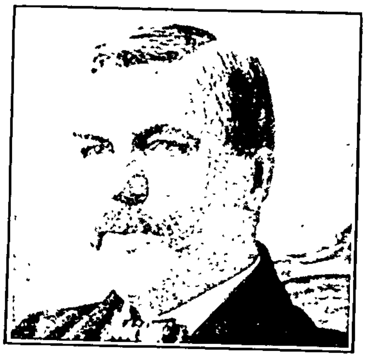

Fig. 2.—Patient at 44. Typical acromegaly appearance.

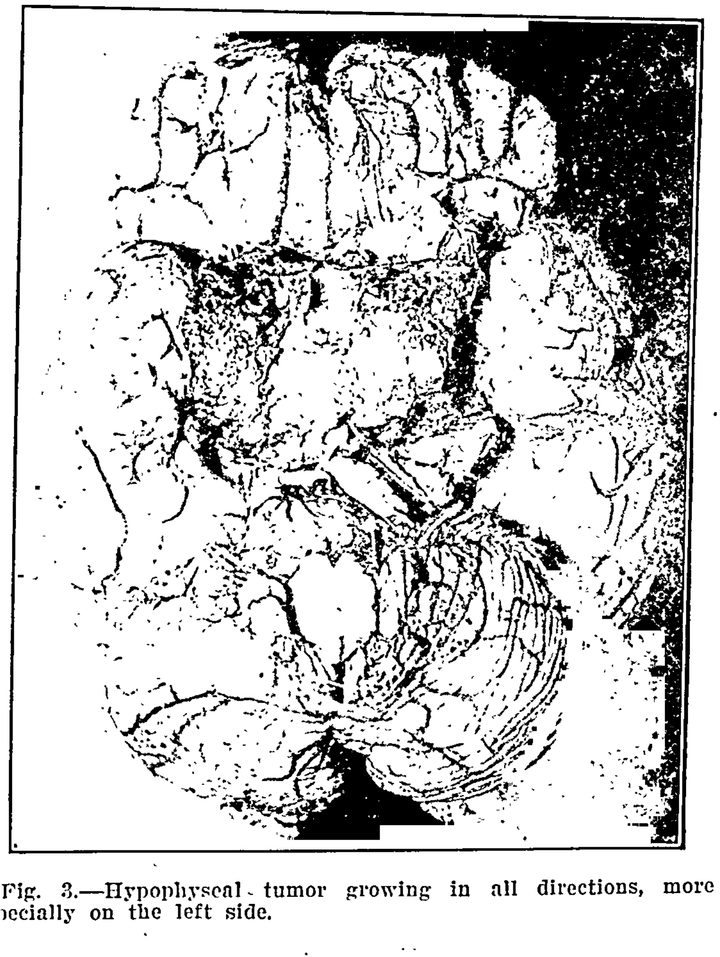

Fig. 3.—Hypophyseal tumor growing in all directions, more especially on the left side.

Nervous Examination.—There is no paralysis, tremor or ataxia. The tendon reflexes are reduced in the upper extremities; the knee-jerks are barely elicitable, the Achilles jerks absent. Babinski's toe phenomenon and Oppenheim's foot sign cannot be obtained. The sensory examination reveals negative findings throughout. The special senses show no anomalies. Hearing, taste and smell are normal. An examination for visual disturbances fails to disclose hemiopic or central vision disorders. As I could not prevail on the patient to visit an ophthalmologist for purposes of perimetric and ophthalmoscopic examination, I am compelled to use rough tests for the visual fields, which yield negative findings. Ophthalmoscopically, the optic nerve appears within the normal limits of health, neither congested nor too pale. That the patient has remained an inveterate newspaper reader almost to the end would lend support to the last statement. The pupils react to light and in accommodation, though rather sluggishly.

Mentality.—Forgetfulness, apathy, absence of mental concentration and a puerile state of mind are constant features. The patient is an indefatigable collector of newspaper clippings from the advertisements of quacks and charlatans, who appeal strongly to his enfeebled mind. On certain days he develops attacks of somnolency, which interrupt all serious occupation with the patient. He thinks a Roentgen-ray examination unnecessary and cannot be induced to go to the laboratory.

Subsequent History.—During the two years previous to his death the major epileptic attacks had become rare, but instead the *petit mal* seizures had become more frequent. In addition there developed great difficulty in swallowing, regular choking spells impeding the process of feeding. The troubles of deglutition diminished about three or four months before death, but the patient became more somnolent and weak; the memory was almost a blank; he was childish, confused and unable to answer simple questions. The patient died in coma July 27, 1910, at the age of 56, having been a sufferer from acromegaly for about fifteen years.

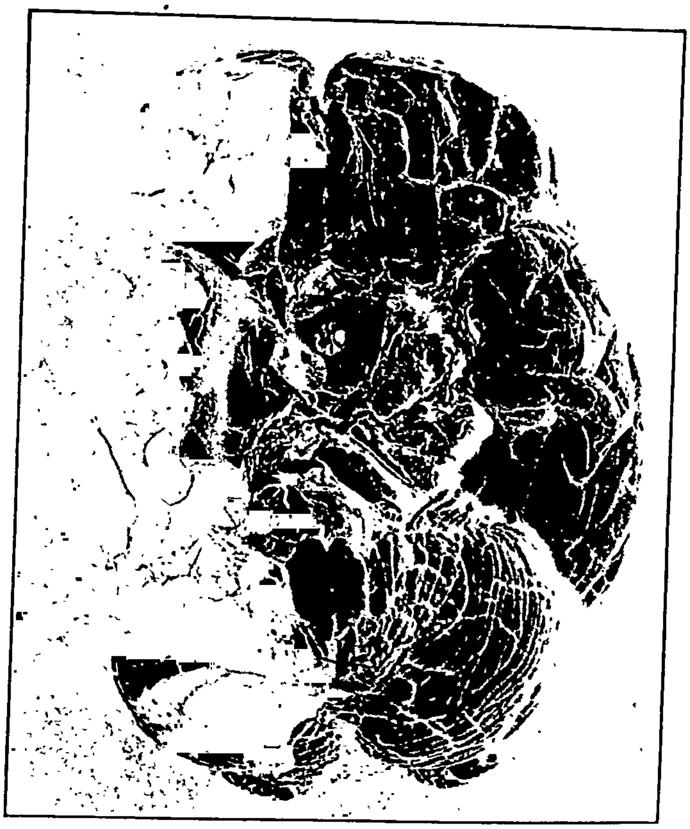

Fig. 4.—Optic chiasm, very much attenuated, surrounded on all sides by tumor mass.

Necropsy.—Permission was granted to examine the brain, but none of the other organs. The important finding was a large tumor in the hypophyseal region, which had grown in all directions (Fig. 3). In its continuous growth, the neoplasm had destroyed the posterior clinoid processes and extended upward as well as downward. While the sphenoidal sinuses were also found infiltrated with tumor tissue, the principal mass grew laterally and upward. As a result of this upward extension the optic chiasm had become attenuated and flattened into a cup-shaped structure (Fig. 4), measuring 2 by 1.5 cm. Laterally the neoplasm grew from the sella toward the uncinate gyri, both of which were thus compressed, but especially the left one. Still further extending into the inferior horns of the lateral ventricles, the tumor produced a considerable degree of irritation hydrocephalus, which was more marked on the left side (Fig. 5). The irregular mass, with its numerous protuberances occupying the entire interpeduncular space, was of a dirty-gray color and had but little cohesiveness; after a few days' hardening in formalin solution it began to fall apart. It measured approximately 6 cm. in its transverse, 4 cm. in the sagittal and 3 cm. in the longitudinal diameter.

Microscopically there are seen a few groups of deeply staining cells (chromophils) scattered among numerous others that stain but feebly (Figs. 6 and 7), (chromophobes), with colloid masses here and there. Part of the tumor shows irregular rows of cylindrical epithelium, having the typical appearance of secreting cells, with their darkly stained protoplasm to one side and the lighter portion to the other (Fig. 8), a picture resembling a secreting gland. The brain not having been especially prepared for the granular stain, the existence of granule cells could not be ascertained with certainty, though Dr. Dean Lewis, who kindly examined and stained for me some specimens from this tumor, believes that he recognized some of the cells on which he and Benda have laid so much stress. When I first examined the tumor the diagnosis of sarcoma was uppermost in my mind, because the growth consisted largely of round cells with little or no stroma. On consulting the literature, however, and especially Benda's and Lewis' writings, I came to the conclusion that the neoplasm belonged to the adenomatous variety of hypophyseal tumor.

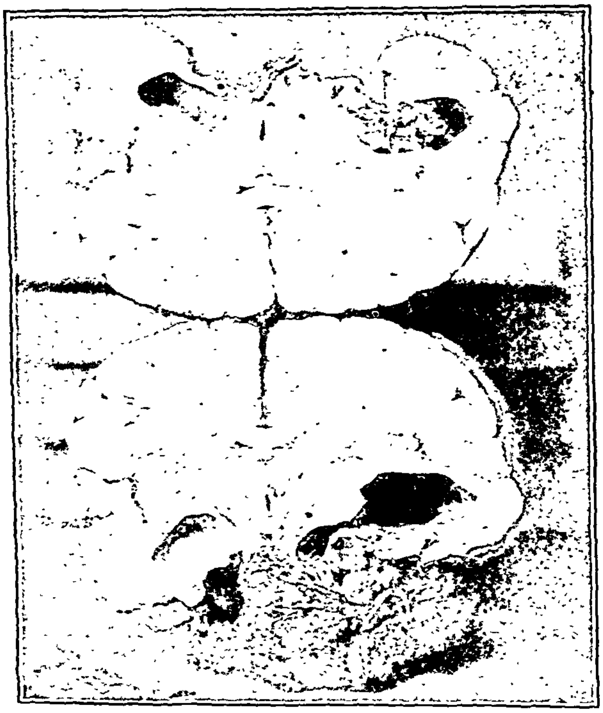

Fig. 5.—Bilateral hydrocephalus, more marked on left side. Infiltrating masses seen in left lateral ventricle.

Summary.—As a result of a psychic trauma or an infection a male patient at the age of 41 develops symptoms of acromegaly, accompanied by attacks of petit mal epilepsy; somewhat later there are added somnolency, cephalalgias and change of character. Though presenting the classic picture of acromegaly the patient never suffered from any of the usual visual disorders of this disease, such as hemiopia and central scotoma. In the course of time, however, attacks of major epilepsy and uncinate fits supervene and the patient dies about fifteen years after the beginning of the first symptoms, having lived the life of a vegetating automaton for many years. The post-mortem examination then reveals a large adenoma, which had pushed up the optic chiasm, extended into the lateral ventricles and incidentally caused a bilateral hydrocephalus, more marked on the left side.

CONCLUSION

The peculiar distribution and extent of the tumor may explain many of the symptoms in this case. The proliferation of glandular tissue leads one to suppose that there must also be a corresponding increase in the function of such tissue. Assuming with Benda,[1] Lewis[2]

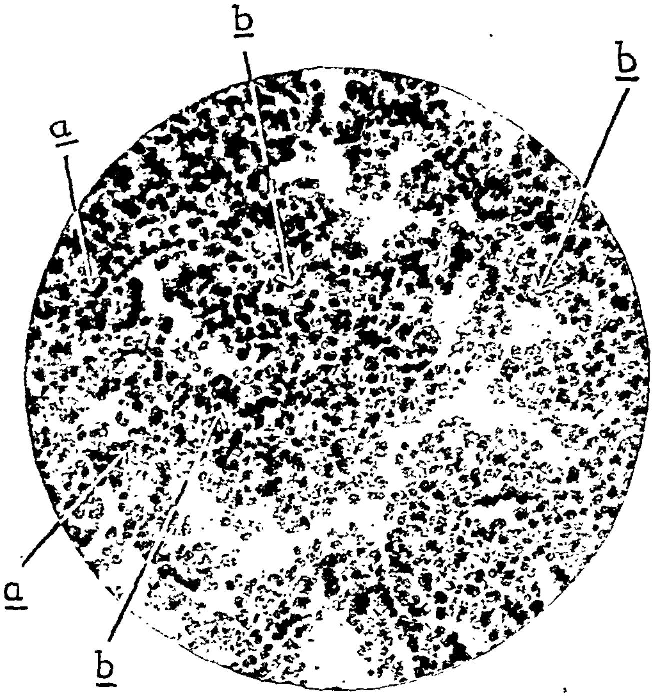

Fig. 6.—Magnified 180 diameters. Tumor consisting of (*a*) chromophobe cells, with few (*b*) chromophil cells interspersed.

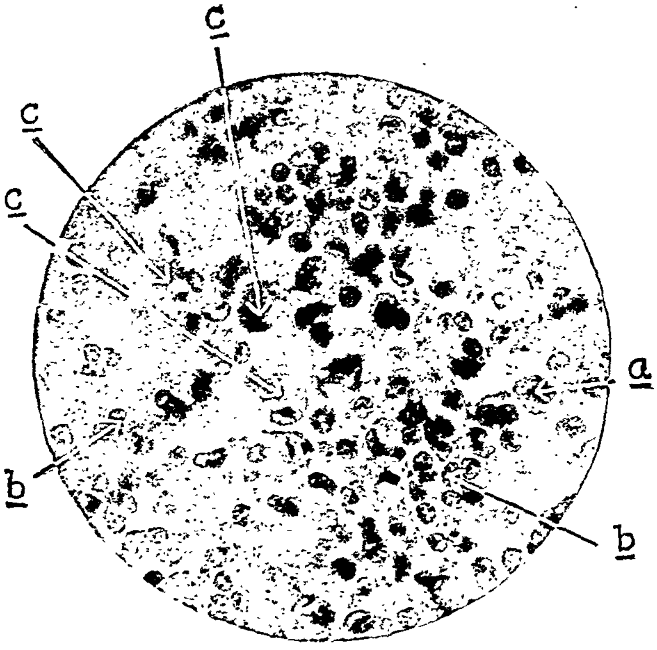

Fig. 7.—Magnified 450 diameters, showing (*a*) large and (*b*) small cells; also (*c*) colloid material.

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[1] Benda, C.: Beiträge z. normalen u. pathologischen Histologie d. menschlichen Hypophysis cerebri, Berl. klin. Wchnschr., 1900, xxxvii, 1205; Deutsch. med. Wchnschr., 1901, xxiii, 536; Pathologische Anatomie d. Hypophysis, Handb. d. path. Anatomie d. Nervensystems, 1904, p. 1418.

[2] Lewis, D. D.: Hyperplasia of the Chromophil Cells of the Hypophysis as the Cause of Acromegaly, with Report of a Case, Bull. Johns Hopkins Hospital, 1905, p. 157; A Contribution to the Subject of Tumors of the Hypophysis, THE JOURNAL A. M. A., Sept. 17, 1910, p. 1002.

and Cushing[3] that the skeletal overgrowth of acromegaly is conditioned by a hypersecretion of the anterior portion of the hypophysis, we certainly had the structures from which such secretions might have been derived. As the tumor continued to grow, the hyperactivity was converted into hypoactivity—the chromophil gave way to chromophobe cells. Then it was that we discovered the existence of adiposity, myasthenia, and loss of sexual power. As may be observed in the microphotographs, the tumor masses consist almost entirely of chromophobe cells, while the chromophil cells—the real secreting structure—seem to have almost entirely disappeared. Apparently there was a stage of immoderate stimulation followed by one of exhaustion. This interpretation harmonizes with the modern teaching on the causation of acromegaly. While the theory of hypophyseal activity receives but scant support from my case, more can be said under the heading of neighborhood symptoms on which Cushing in his monograph puts great emphasis. We may recall that the patient developed *petit-mal* attacks at first, and, as the tumor continued to grow toward the uncinate gyri, there also appeared attacks which were accompanied by a smacking of the lips and movements as though the patient were tasting some unpleasant substance. These were probably *petit-mal* seizures belonging to the type which Hughling Jackson described long ago as uncinate fits—caused by the extension of the growth to the uncinate convolutions. The attacks of *grand-mal* epilepsy must also be considered as neighborhood symptoms. They were most probably caused by the varying fluid content in the ventricles compressing the brain against the skull, thus producing cortical irritation. To the invasion of the frontal lobe by the tumor must be attributed the mental changes, somnolency and puerile behavior—symptoms frequently noted in acromegaly. The absence of visual disturbances in my case can be explained from the appearance of the optic chiasm, as may be observed in the photograph. The chiasm appears thinned out, but widened; evidently the neoplasm compressed this structure very slowly, thus permitting gradual accommodation to pressure, while the tumor itself showed a tendency to extend laterally, rather than to grow in an upward direction.

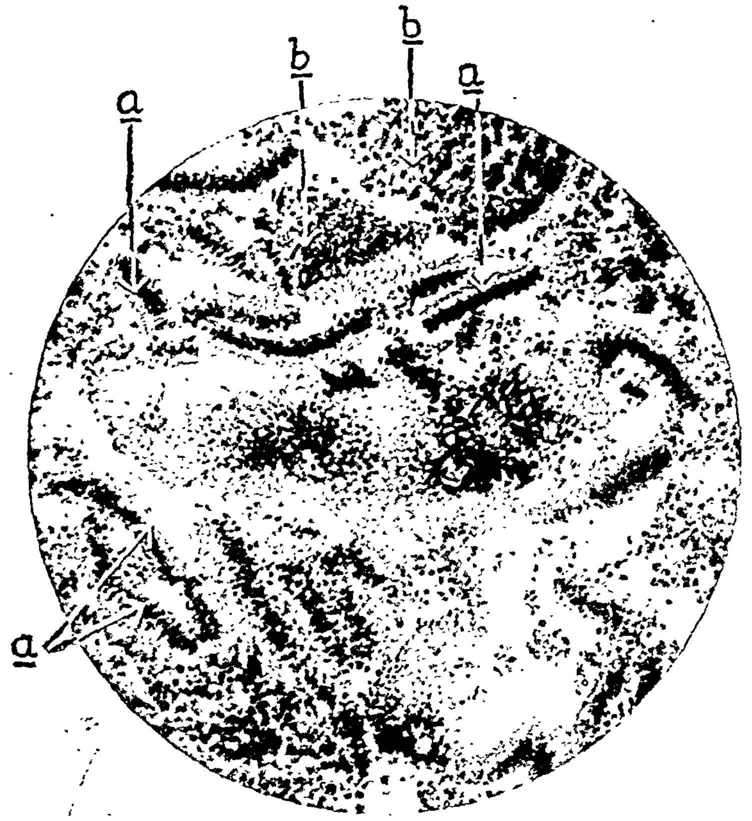

Fig. 8.—Magnified 110 diameters. (*a*) Irregular rows of cylindrical epithelium, resembling glandular structure; (*b*) scattered round cells like sarcoma.

A symptom which may throw some additional light, as every such case must, on the interrelationship existing between the various glands of internal secretion, was the complete absence of a thyroid gland in my patient. Possibly in taking up the work of the thyroid, the hypophysis continued to grow and functionate beyond the physiologic needs, with the resulting formation of a large adenoma.

32 North State Street.

INTESTINAL SAND

REPORT OF A CASE WITH CHEMICAL ANALYSIS OF SAND *

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BOSTON

Laboulbene[1] reported the first case of intestinal sand in 1873. He found a sandy substance in the feces resembling brown or yellow sand, which he believed was of vegetable origin. Since that time there have been many reports of cases in which intestinal sand was associated with one or more clinical manifestations, and attempts have been made to show that the sand was a part of various forms of diathesis.

More recently Myer and Cook[2] studied the literature on the subject and came to the conclusion that intestinal sand was not a part of any clinical entity but that, in their own case, it resulted from the ingestion of bananas. They found that after eating bananas sand invariably appeared in the feces after twenty-four hours and often continued for several days. It came in large quantities at first (from 1 teaspoonful to 1 tablespoonful) and gradually diminished in amount. If the feces were not manipulated too much, the grains were often found in chains. These chains correspond in arrangement and shape to the cylindrical cells in the milk-ducts of the banana. These cells contained highly refractive resin balls or masses, which were suspended in a fluid rich in tannin.[3] They believed that these resin balls were affected by the secretions of the stomach and intestine in such a way that the resin was hardened and an insoluble tannate formed. They were unable, however, to reproduce the sand by artificial digestion or by placing the banana in fecal material.

I have examined many hundreds of stools both in the gross and under the microscope during the past five years and have seen only two cases with intestinal sand. Both of the patients denied having eaten bananas within several months. The stools of many other children, who had eaten bananas, failed to show intestinal sand.

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[3] Cushing, H.: The Hypophysis Cerebri; Clinical Aspects of Hyperpituitarism and of Hypopituitarism, The Journal A. M. A., July 24, 1909, p. 249; The Functions of the Pituitary Body, Am. Jour. Med. Sc., 1910, xxxix, 473; The Pituitary Body and its Disorders, J. B. Lippincott Company. This excellent monograph contains the recent literature on the hypophysis.

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* Presented before the American Association for the Advancement of Clinical Investigation, Washington, D. C., May, 1913.

[1] Laboulbene: Bull. de l'Acad. de méd., November, 1873.

[2] Myer and Cook: Intestinal Sand: the Banana One of Its Sources. Am. Jour. Med. Sc., 1909, cxxxvii, 383.

[3] Bary: Vergleichende Anatomie bei Phanerogamen und Farne, 1877, pp. 153, 160, 451, quoted by Myer and Cook.

GROSS APPEARANCE OF INTESTINAL SAND

Attention is first drawn to the stool by many fine black or brown sand-like particles intimately mixed with the fecal material. The stool may look peppered. In the case which I report the fecal material was soft, brown, smooth, of a foul odor and contained a large amount of vegetable detritus, which could not be identified.

Under the microscope there was a small amount of fat in the form of soaps (the amount was normal). There were no starch granules but a few meat fibers (normal). Scattered through the stool was a large amount of cellulose.

The sand was heavier than the fecal material and was obtained in a relatively pure condition, by frequent washing, straining through a sieve, and decantation. It was impossible, however, to separate it entirely from the cellulose remains. It had a brown, sandy appearance and felt gritty between the fingers.

MICROSCOPIC APPEARANCE

Under the microscope it was found to consist of two kinds of sand, one of which was colorless and resembled calcium or magnesium phosphate, and the other irregular or oval, sometimes crystalline with rough edges and sometimes smooth. The color varied from a light yellow to a beautiful, deep, claret red. The crystals were translucent but not transparent. The grains were hard and brittle, and when crushed under the cover-glass, still retained their crystalline appearance.

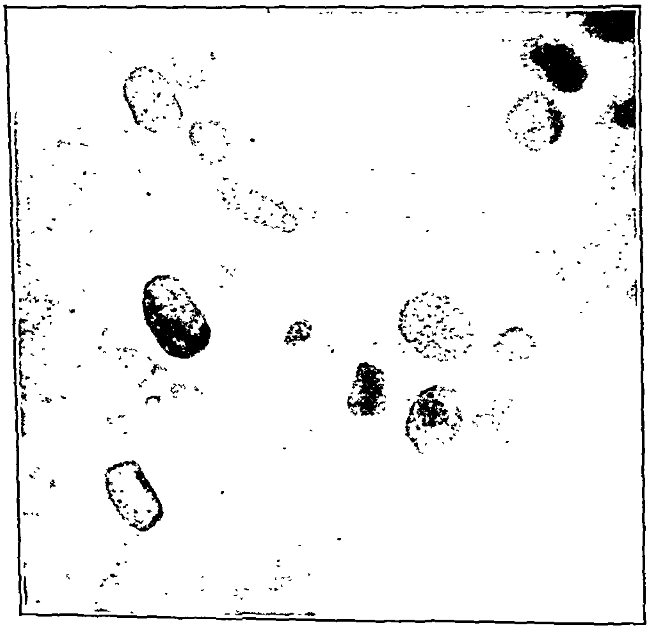

Fig. 1.—Intestinal sand in feces (magnified 62½ times).

CHEMICAL COMPOSITION

Marquery[4] found organic matter 72 per cent., inorganic 28 per cent. Dieulafoy[5] found water 11.25 per cent.; fecal material 22.6 per cent.; phosphoric acid 17.56 per cent.; calcium 26.22 per cent.; magnesium 14.05 per cent.; silica 5.68 per cent. Myer and Cook[2] found moisture 17 per cent.; organic matter 95.8 per cent.; nitrogen (Kjeldall) 2.5 per cent. The inorganic portion consisted mainly of the phosphate of calcium.

The sand in my case showed the following analysis:

Nitrogen	3.0 per cent.
Total fat	5.0 per cent.
Ash	17.4 per cent.
Calcium	7.4 per cent.
Magnesium	2.0 per cent.
Phosphates	present
Material soluble in alcohol, after hydrolysis (resinous?)	14.0 per cent.

The chemical characteristics were as follows: It was insoluble in hot and cold water, alcohol, ether, chloroform, weak acids and alkalies. Concentrated acids, such as sulphuric acid, partially dissolve the crystals and cause an evolution of gas, which is presumably carbon dioxid. It does not give the murexid test and shows no sugar with Benedict's solution. These gross chemical findings agree with those of other observers. Hydrolizing and extraction with 3 per cent. hydrochloric alcohol, such as is used in the estimation of fat in the stools, dissolves all the red color from the sand and leaves behind an amorphous white powder. This powder is soluble in strong nitric acid and reprecipitates on the addition of ammonium hydrate. The solution gives the qualitative test for phosphates.

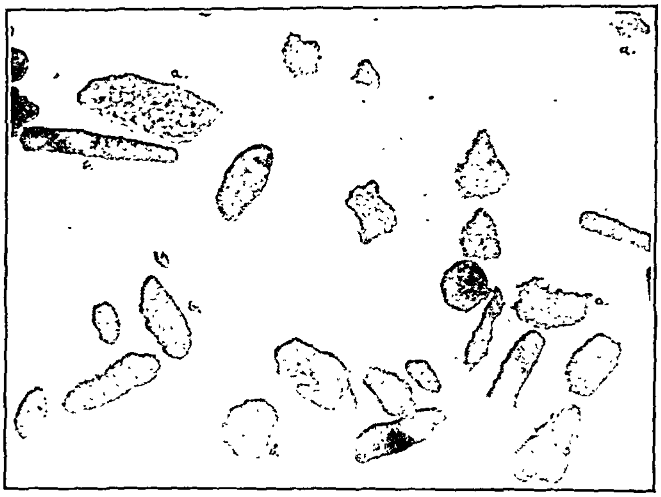

Fig. 2.—Intestinal sand. The irregular masses (*a*) are white. The more regular and longer masses (*b*) are claret-colored (magnified about 45 times).

After hydrolysis, the hydrochloric alcohol becomes bright reddish-brown. When it is evaporated, a sticky reddish-brown material is left behind. This material is insoluble in ether, chloroform, petroleum-ether and water. It is soluble in absolute alcohol and precipitated by water. It is possibly some form of resin or amino-acid. Similar materials are often found on extracting the stools of children when no sand is present.

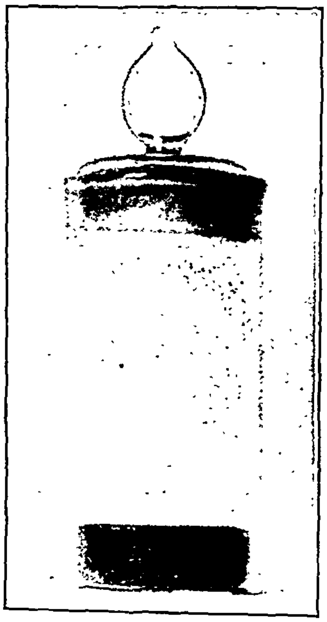

Fig. 3.—Intestinal sand. Note the pepper-like appearance.

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[4] Marquery: Assoc. française pour l'avancement des sciences, 1879, p. 878.

[5] Dieulafoy: Bull. de l'acad. de méd., Paris, 1879.

REPORT OF CASE

Girl, aged 9 years. When patient was 1 year old she commenced to have occasional digestive disturbances, during which she lost her appetite, became nauseated and often vomited. She was always extremely cross and irritable during these attacks and occasionally had a slight fever. It was during one of these attacks that the mother noticed for the first time the small brown specks in the stools. A dose of castor oil was given, the patient quickly recovered and coincidentally the specks disappeared from the stools. The frequency of the attacks varied from one week to three months. In December, 1908, at the age of 5 years, the patient had symptoms which were very suggestive of hip-joint disease, though her general condition otherwise was good and did not suggest tuberculosis. There was some pain with use of the joint, and the child walked with a slight limp. Apparatus was applied to protect the hip-joint and worn for several months, after which time it was discarded, because the recovery was complete. In May, 1910, the child was in excellent condition, growing rapidly, and walking without a limp and without aid of the splint.

The cross, irritable spells, accompanied by intestinal sand, persisted up to July, 1912. Since then, the patient has not been seen. Various diets were tried without any influence on the condition. No connection could be found between the appearance of the sand and bananas or any other fruit or vegetable. The sand, the analysis of which was given in the foregoing, was obtained in November, 1908, at about the time the hip-symptoms were developing.

SUMMARY

True intestinal sand may be present when no banana is eaten. The history in the case reported is suggestive of some connection between the sand and the intestinal symptoms. It is impossible to say whether or not the sand bears any etiologic relation to the intestinal or joint-symptoms or whether or not it is of any diagnostic importance.

311 Beacon Street.

THE HISTOPATHOLOGY OF POMPHOLYX*

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Pompholyx was first described, as a form of dyshydrosis, by Tilbury Fox,[1] who was of the opinion that the condition was characterized essentially by "the retention in the follicles of the skin of sweat, rapidly and freely excreted," and believed that the affection bore the same relation to the sweat follicles that acne vulgaris does to the sebaceous glands. Hutchinson[2] who independently recognized and described the disease at about the same time, was opposed to this view, and, basing his argument on the symmetry and the spontaneous appearance and disappearance of the clinical manifestations, and on the fact that the condition was seen most frequently in persons whose vitality had been lowered by worry, overwork and similar agencies, concluded that it was an acute, inflammatory disease of the rete, neurotic in origin. He[3] suggested for it the name "cheiropompholyx."

Robinson[4] of New York first examined the lesions microscopically, and also analyzed the contents of some of the vesicles. The results of his investigations convinced him that the condition bore no relation to the coil-glands or ducts, and, in view of the fact that the feet also were sometimes involved, he proposed the name "pompholyx" for the disorder. Thin[5] confirmed Robinson's findings, and agreed with him and with Hutchinson regarding the probable neurotic origin of the affection. Fox and Radcliffe Crocker[6] published in 1878 their first pathologic report. They found signs of inflammation in the coil-glands, and many of the earliest vesicles, which always formed in the rete, were directly in a line with and interrupted the course of a sweat duct. Later, Crocker[7] obtained some material from another patient, and examined it microscopically. In this case, he found that while a few of the vesicles were interpapillary, and had developed in the course of the coil-gland ducts, more often the cavities were super-

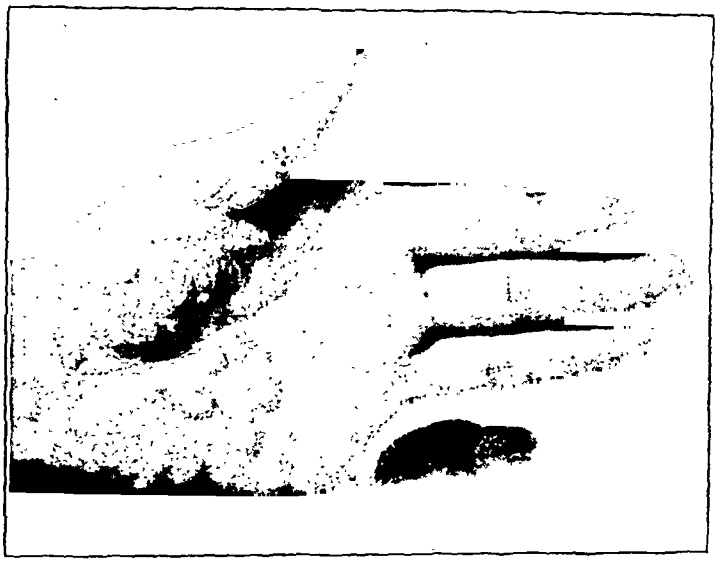

Fig. 1.—Lesions on palm at height of attack, Case 1.

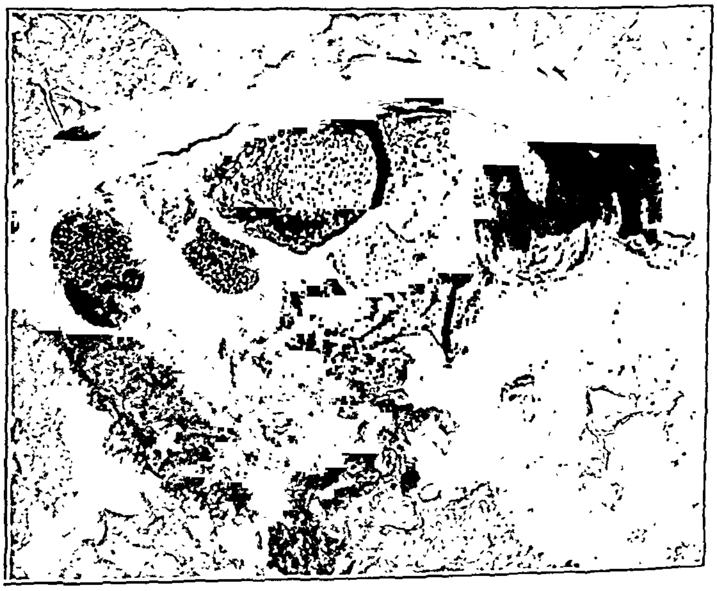

Fig. 2.—Large, multilocular lesion from palm in Case 1.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Fox, Tilbury: Dyshydrosis, Am. Jour. Syph. and Dermat.,
1873, p. 1; Clinical Lecture on Dyshydrosis, an Undescribed Erup-
tion, Brit. Med. Jour., 1873, p. 365; Skin Affection Lately Described
as Dyshydrosis, Brit. Med. Jour., 1877, p. 799; Clinical Comments
on Dyshydrosis and its Morbid Anatomy, Brit. Med. Jour., 1878,
p. 749; Clinical Lecture on Dyshydrosis, Atlas of Skin Diseases,
Plate li, p. 84, London, 1873.

[2] Hutchinson: Notes on a Clinical Lecture Written Out in
1871, and Now Printed Verbatim. Lancet, London, 1876, p. 630.

[3] Hutchinson: Cheiropompholyx, Letter to the Lancet, London,
1876, p. 307.

[4] Robinson: Pompholyx, the Cheiropompholyx of Hutchinson
and the Dyshydrosis of Tilbury Fox, Arch. Dermat., 1877, p. 289.

[5] Thin: Remarks on a Skin Affection Lately Observed and
Described as Dyshydrosis, Cheiropompholyx and Pompholyx, Brit.
Med. Jour., 1877, p. 761.

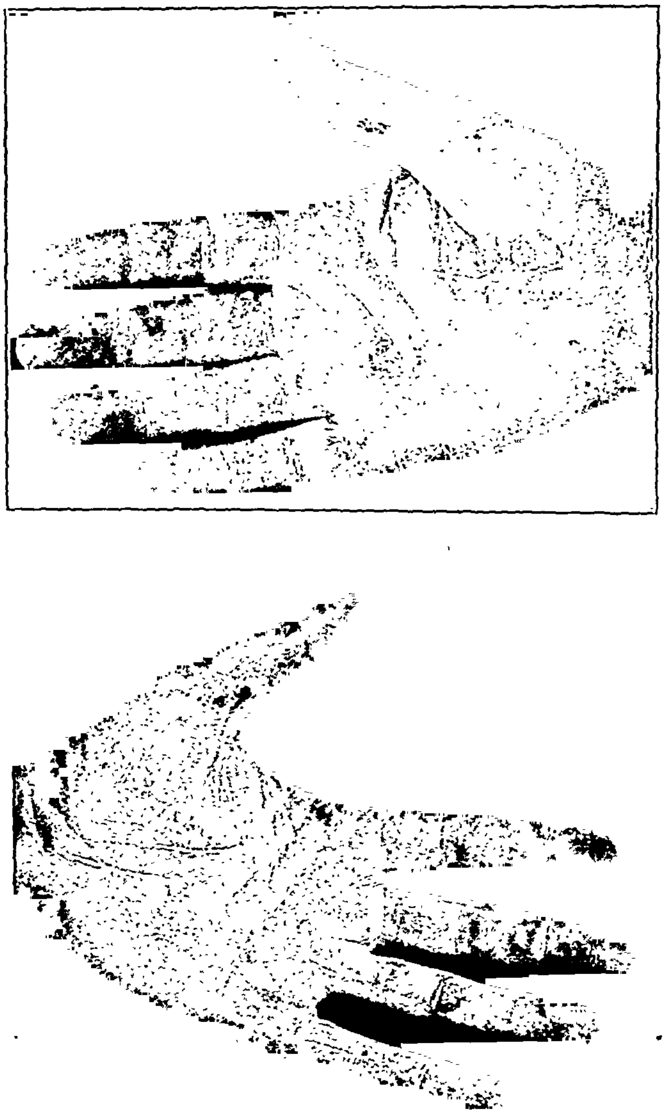
[6] Fox and Crocker Radcliffe: The Minute Anatomy of Dyshy-
drosis, Tr. Path. Soc., London, 1878, p. 264.

[7] Crocker, Radcliffe: Diseases of the Skin, P. Blakiston's Son
and Co., Phila., Ed. 3, i, 291.

papillary, and situated between the ducts. In no instance could he convince himself that the coil-gland was inflamed. The fact that, in his text-book, Crocker finally adopted the name "pompholyx" for the affection and classed the disease among the inflammations instead of with disorders of the coil-glands would indicate that he was far from positive regarding the correctness of his earlier deductions. Williams[8] and Santi[9] working in Unna's laboratory, both concluded, with Robinson, that the vesicles do not result from dilatation of the intraspinous portion of the coil-gland ducts. Williams studied 229 serial sections, *from three typical lesions.* He found that while many of the vesicles lay quite close to the sweat ducts, they did not communicate with the latter. Frequently the ducts were diminished in size, and pressed to one side, forming wide loops around the cavities, but not connecting with them in any way. Breda's[10] conclusions, published at about the same time, but based on independent investigation, in Italy, were very similar to those of Williams. In particular, he emphasized the perivesicular looping of the coil-gland ducts in some of the specimens (an observation of Williams' the accuracy of which appears to have been questioned by Crocker.[7]) Paul Farey[11] who next made an exhaustive study of the disease, decided that the pathologic process did not involve the sweat apparatus in any way, but probably was due to a temporary exacerbation of a chronic vasomotor disturbance, and might be regarded as a toxiconeurodermatitis.

Despite the accumulated evidence, however, many expert clinicians still hold to the sweat-duct origin of the condition. Recently, Nestarowsky[12] working in Pawlow's laboratory in St. Petersburg, has examined a large number of sections (2,840) from six cases of pompholyx. He criticizes the work of other observers, in that he believes that their conclusions have been based on insufficient data. In his opinion, the affection is a disorder of the sweat-ducts, secondary to disturbance of the vasomotor or secretory nerves. He considers that hyperhydrosis, or the condition underlying it, is a predisposing factor. The distribution of the lesions, together with the fact that the disorder occurs most frequently (but not always) in individuals who are the subjects of hyperhydrosis is very suggestive, and Schamberg[13] states that "the clinical phenomena rather support the views of Tilbury Fox and Crocker," while Pusey,[14] a dermatologist of wide experience and admirable judgment, expresses the belief that "the disease is exactly analogous to miliaria on other parts, but presenting clinical differences on the palms and soles because of the thickened epidermis under which the sweat is retained."

It may be stated, in passing, that the very extraordinary case reported by Rasoni[15] which is sometimes referred to as an instance of "generalized pompholyx," was very probably an example of the condition recently described by Ormsby[16] under the name of "syringoma." During the past summer, it was my good fortune to see a large number of cases of pompholyx, a rather unusual experience in the Middle West. All were in private practice, and, although ambulatory, quite well under control. At various periods during June, July and August, nine more or less typical examples of the disease were selected for study. Of these patients, seven submitted to biopsy (two at their own suggestion, when they found that I was particularly interested in their condition. Each of these had two specimens removed). Lesions at various stages of development were selected for excision. All doubtful cases, presenting vesicles on the sides of the fingers only, were rejected



Figs. 3 and 4.—Lesions in stage of desquamation. Case 5.

SUMMARY OF CASES STUDIED

A brief summary of the case histories is of interest:

Case 1.—L. G., man, aged 20, single, train despatcher. Referred to me by Dr. Leon Rosenwald of this city. Hands and feet affected. Fourth attack (at intervals of one year). Plantar and palmar hyperhydrosis. Two lesions excised from left palm.

Case 2.—A. N., woman, aged 32, married, housewife. Hands and feet affected. Numerous previous attacks at brief intervals, during past five years. The vesicles develop rapidly, and an attack usually lasts only a few days. Patient extremely nervous and excitable. Cold extremities. Plantar and palmar hyperhydrosis. One lesion excised from left palm.

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[8] Williams: Cheiropompholyx, Monatsh. f. prakt. Dermat., 1891, p. 41.

[9] Santi: Zur Frage der als Dyshydrosis, Cheiropompholyx und Pompholyx beschriebenen Hauterkrankung. Monatsh. f. prakt. Dermat., 1892, p. 93.

[10] Breda: Pompholyce. Robinson. Osservazioni clinico-istologische. Riv. clin. e terap., 1891, p. 547.

[11] Farey, Paul: Thèse de Paris, 1896.

[12] Nestarowsky: Dyshydrosis, Dermat. Ztschr., 1906, p. 183 et seq.

[13] Schamberg: Diseases of the Skin and the Eruptive Fevers, W. B. Saunders Co., Phila., 1911, p. 98.

[14] Pusey: The Principles and Practice of Dermatology, Appleton & Co., New York, 1911, p. 948.

[15] Rasoni: Tr. Internat. Med. Cong., London, 1881, iii, 146.

[16] Ormsby: Jour. Cutan. Dis., 1910, p. 433.

Case 3.—S. M., woman, aged 34, widow, governess. Referred to me by Dr. J. M. Frankenburger of this city. Hands affected. Second attack, the first having occurred in June, 1911. One lesion excised from left palm.

Case 4.—F. G., man, aged 38, single, clerk. Referred to me by Dr. Joseph Nutz of this city. Hands and feet affected. Palmar and plantar hyperhydrosis. Third attack (annual).

Case 5.—H. S., man, aged 46, married, judge. Hands and feet affected. Second attack, the first having occurred in July, 1911. Two lesions excised from palm.

Case 6.—P. K., man, aged 41, married, bookkeeper. Referred to me by Dr. Eugene Carbaugh of this city. Hands and feet affected, former severely, latter slightly. First attack.

Case 7.—E. M., woman, aged 24, married, housewife. Referred to me by Dr. Fred Kyger of this city. Hands and feet affected. Second attack, the first having occurred in August, 1911. Lesion excised from right palm.

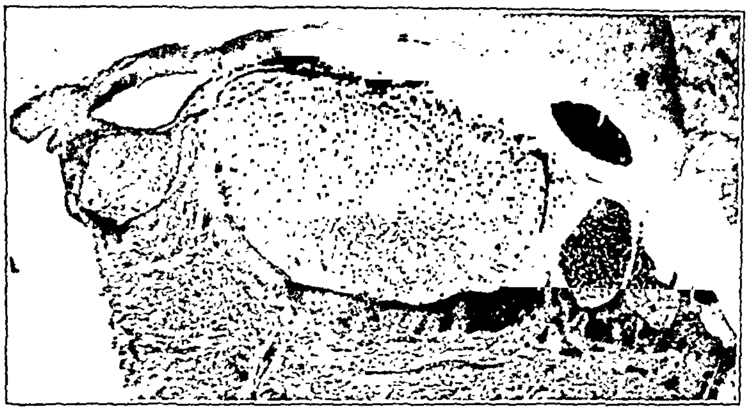

Fig. 5.—Pompholyx lesion occurring in line of coil-gland duct. The canal was of normal caliber throughout its course.

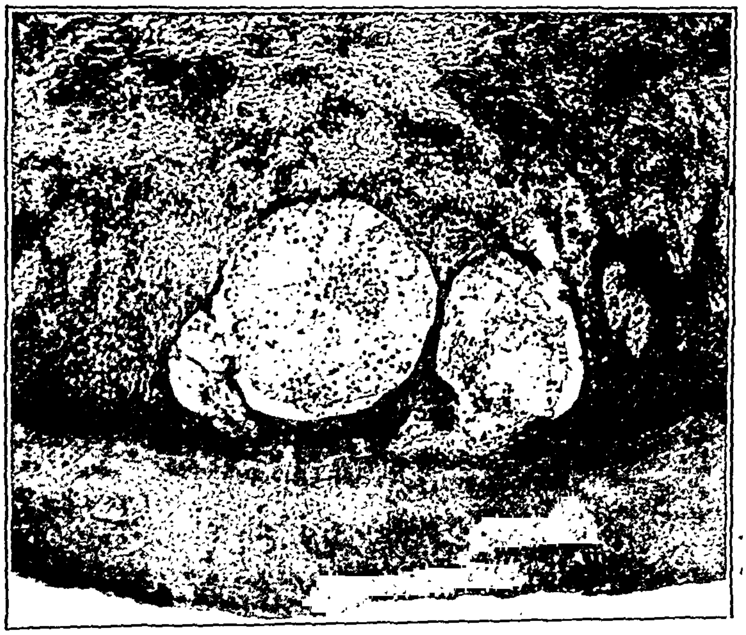

Fig. 6.—Two vesicles from palmar surface in Case 7.

Case 8.—L. I., *woman, aged 29, single,* stenographer. Referred to me by Dr. N. E. Lake of this city. Hands affected. Third attack, the first having occurred in May, 1910, the second in September, 1911. Hyperhydrosis of hands and feet. One lesion excised from left palm.

Case 9.—A. R., *woman,* aged 34, married, housewife. Referred to me by Dr. Eugene Carbaugh of this city. Second attack, the first having occurred in August, 1910. Hands and feet affected, latter only slightly. No hyperhydrosis. Lesion excised from thenar surface of left hand.

EXAMINATION AND TREATMENT

For anesthesia, Schleich's solution (No. 1) was employed, the preparation being injected subcutaneously, at a distance of about 1 cm. from the margin of the lesion. The bits of tissue were removed by means of a medium-sized cutaneous punch, and immediately placed in a 4 per cent. aqueous solution of formalin. One of the specimens from Case 1 was frozen, and a number of sections (eighty-four) were cut from it. The others were passed through the usual solutions, mounted in celloidin or in paraffin, and cut serially. The greater number were stained with hematoxylin-eosin, although a few Weigert and Gram-Weigert preparations were made. In all, 2,028 sections were examined. The findings corresponded in almost every respect to those of Robinson, Santi, Williams and Breda. No displaced coil-gland ducts were found, however, and no bacilli, such as have been described by Unna,[17] *as occurring in* Williams' sections, were to be seen. In only two specimens, one from Case 5 and one from Case 9, was there any visible connection between the vesicles and the ducts. In sections from these two lesions, the coil-glands and the epithelial lining of the lower portion of the ducts showed no inflammatory or degenerative changes, and there was every indication that the involvement of the sweat-apparatus was purely accidental (an occurrence which one could not consider as unusual in a region so thick in coil-gland elements as the palmar surface of the hand).

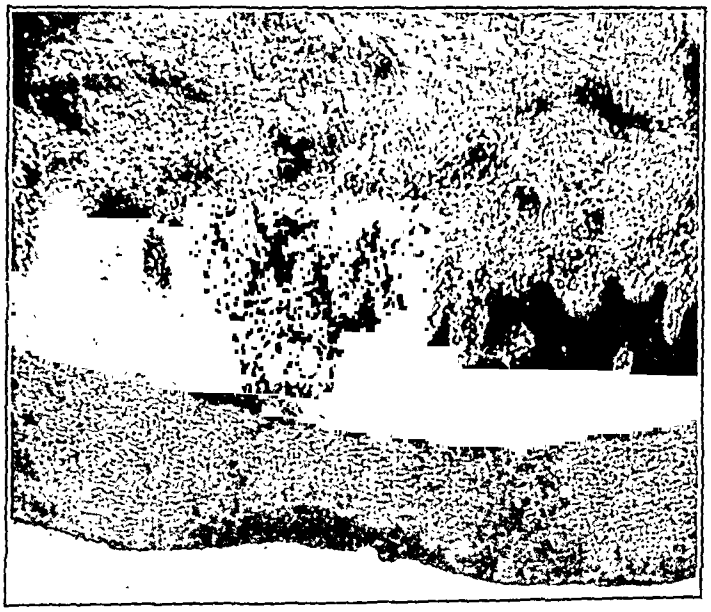

Fig. 7.—Lesion from palm, very early stage (Spencer, 0.25 Obj., no ocular).

At the beginning, I must frankly acknowledge that I shared the view of Tilbury Fox and Crocker and Nestarowsky and Pusey, and, subconsciously it may be, the work was undertaken with the intention of proving the correctness of this supposition. When the first lesion was examined, however, and no evidence of a connection between the vesicles and the coil-glands or ducts was found, I was somewhat disconcerted, and determined to employ other methods of investigation in addition to the examination of serial sections. The patient (Case 1) was immediately placed on pilocarpin hydrochlorid, 0.005 gm., gradually increased to 0.02, by mouth, every four hours. At the end of forty-eight hours, the lesions showed little, if any change, although sweating had been profuse on all parts of the body during the entire time. Patients 3 and 4 received the same treatment, with similar results, or rather lack of results. Patient 2 was in the middle of an attack when first seen. She was placed on atropin sulphate, 0.0003 gm., gradually increased to 0.0006, by mouth, every four hours. The condition appeared to improve rapidly, and both the patient and I were greatly pleased. Three weeks later, however, she had another attack, and the same drug, pushed to the physiologic limit, failed to have any effect whatever on the lesions. Cases 7 and 8, similarly treated, also showed no signs of improvement, consequently it is very probable that No. 2 was just on the point of getting well when treatment was instituted. Patients 3, 4, 5, 6 and 8 were given potassium iodid, 0.6 gm. in aqueous solution, by mouth, after meals and at bed hour, for periods of from two to five days. In addition, Patients 5 and 6 each received two doses of pilocarpin, hypodermically, on the third day of the iodid medication.

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[17] Unna: Histopathology of the Diseases of the Skin, Walker's Trans., Macmillan and Co., New York, 1896, p. 179.

At various times during the period in which iodid was administered, fluid was carefully withdrawn from several of the vesicles in each case, and tested for iodin. Under the direction of Dr. Roy Cross, of the Kansas City Testing Laboratory, this was done by placing a few drops of the fluid in a small test-tube, adding some crystals of potassium permanganate, and, after placing a bit of moist starch-paper (made from quantitative filter material) at the mouth of the tube, adding a few drops of concentrated sulphuric acid. In only one instance, the lesion being on the left palm of Patient 3, was an iodin reaction obtained. Some of the vesicles were quite large, a centimeter or more in diameter, and from 3 to 12 minims of fluid were withdrawn from each. The test is an exceedingly delicate one, and it is hardly probable that if iodin had been present it would have escaped detection. Only a few cultures were made, as the problem was undertaken from a purely histopathologic point of view. Agar, glycerin-agar and blood-serum were used as mediums. The staphylococcus (albus and aureus) was the only organism found.

CONCLUSIONS

The pathologic changes in pompholyx are confined almost wholly to the prickle-cell layer, only a slight perivascular infiltration being present in the derma.

The coil-glands are not involved, and the ducts are implicated only by accident. At bottom, the condition is very probably a neurosis, the direct exciting cause being a toxin other than locally microbic in origin.

610 Commerce Building.

ABSTRACT OF DISCUSSION

Dr. Joseph Zeisler, Chicago: I was particularly interested in listening to Dr. Sutton's views on the histopathology of pompholyx because the results of his work support what I have taught for many years. My associate, Dr. Simpson, will bear me out in my statement that I have always impressed on my students the neurotic character of these cases, and have held that there was no real involvement of the sweat-glands. I have always maintained that the term "dyshidrosis" was a misnomer, and I am glad that my ideas on this point have been supported. I have always held that any eruption that occurs in the form of grouped small vesicles indicates a neurotic element, and I believe that we have good reasons for looking on the pemphigus group as the result of an underlying neurosis, and the same is true of pompholyx. This eruption sometimes appears along the course of the ulnar nerve and reaches no further.

Dr. Isadore Dyer, New Orleans: Perhaps no one in this audience is more interested than I in the general proposition of pompholyx, for the reason that perhaps no one sees more cases of pompholyx than we do in New Orleans, where we number our cases by the score, and where, during the warm season, from May to October, we see anywhere from one hundred to two hundred cases. It is rather unusual to see these cases during the colder weather, and if we do see them during the winter months it is because the weather is unseasonably warm. The eruption is sometimes preceded by an elevation of temperature. As to the pathology of this disease, basing my opinion on clinical observation, I have held for a number of years that pompholyx is a disorder of the sweat-glands, those associated with hyperhidrosis, and in that connection I would mention its frequent occurrence on the feet instead of the hands. While Dr. Sutton and others who have studied the histopathology of this disease may not agree with our observation, yet those of use who have lived in the atmosphere of this disease and have so frequently seen the evidence that it was associated with seasonal changes, still argue in favor of its relation to the sweat-glands, although this relationship has not been established.

My observation has been that pompholyx occurs with much greater frequency in males than in females—perhaps ten to one; that it rarely occurs excepting among excessive smokers, and that reduction in the quantity of tobacco consumed materially assists in controlling the disease. In addition to this, I usually reduce the amount of proteins in the diet and order strychnin, and occasionally give the high-frequency current or the Roentgen ray.

In view of what Dr. Sutton has told us I shall no longer teach that pompholyx is due to a disturbance of the sweat-glands. In many of the cases that I have seen the eruption never reaches the stage of vesiculation. The patient may, for a period of years, show an eruption similar to that presented in some of the photographs exhibited here to-day, and without any vesiculation. The lesions may simply consist of small scaly spots.

Dr. William A. Pusey, Chicago: I agree with Dr. Dyer that this disease may not have its inception in the sweat-glands, but I am not convinced that it is not a sweat eruption. My idea of pompholyx is based largely on the facts of the condition as we see it. We see it in sweating feet and to a less degree in sweating hands—not necessarily in hyperhidrosis but in the ordinary sweating during hot weather. I have seen a good many cases in Chicago, especially recurrent attacks affecting the feet, in patients who have an attack summer after summer. To my mind the situation is this: There is a maceration of the epidermis by the sweat, with the formation of sweat-cavities in the epidermis which may or may not become inflammatory. These cases may become infected by the *Staphylococcus albus*, which is always there.

The fact that Dr. Sutton does not always find his vesicles in the site of the sweat-channel, does not prove that the lesions are not due to the collection of sweat in the epidermis. The sweat-channel in the epidermis is not a closed channel; the sweat percolates between the epidermal cells and, when excessive, may collect at sites of least resistance which may not be in the line of the sweat-channel—just as water in a marsh forms pools in depressions regardless of their relation to the stream which feeds the marsh. I think you can very readily conceive of the lesion of pompholyx being produced by the sweat and only in a certain proportion of the cases occurring directly in the sweat-channel. As to the neurotic theory of pompholyx, one reason, perhaps, for my aversion to it is my objection to neurotic theories in general for skin eruptions. To my mind, the neurotic involvement is secondary rather than primary, and I believe we possess a much more rational explanation for the lesions of pompholyx in a vasomotor disturbance of toxic origin or any other rather than in a purely nervous origin. The patients I see with pompholyx belong to the ordinary run of individuals whose hands and feet sweat in hot weather. Some of them smoke, perhaps to excess; others do not smoke at all. They present other lapses from the ideal standard of personal habits—just like other mortals—to which I would attach as much or as little importance.

Dr. Frank E. Simpson, Chicago: I believe that there are two types of pompholyx, that we do not always see or describe the same type, and that in some of these cases there is a distinct neurotic element. These are probably the cases of true pompholyx. In other cases, we are dealing, not with pompholyx, but with a condition allied to, or identical with, miliaria.

Dr. M. L. Ravitch, Louisville, Ky.: A discussion of this kind is good evidence of the fact that the text-books are not infallible. Every text-book on the subject tells us that children do not suffer from pompholyx, but in my section of the country they do. I believe Crocker was right when he said that the lesions were due rather to hyperhidrosis, than to dyshidrosis, and so on, and in all the cases which I have seen there was a neurotic element present. I am also inclined to believe that the use of tobacco in the shape of excessive smoking or chewing has some etiologic bearing on it.

A year ago Dr. Dyer advised the use of salicylic acid and strychnin in the treatment of pompholyx. I have tried this treatment with very good results, and I have also found that these patients often recovered with a change of climate. Some authorities, among them Unna, assert that the eruption has a bacterial origin. In some of these lesions we find the staphylococcus, but I regard that as an incidental occurrence.

Dr. K. A. Zurawski, Chicago: I think that the histologic features of pompholyx as described by Dr. Sutton may be considered as final, and that the various theories that have been advanced in the discussion as having an etiologic bearing on the disease are not incompatible with the histopathologic picture he has advanced. We know that in pompholyx we have an accumulation of fluid in a certain slow-forming cavity. The question arises whether or not this is due to a neurotic element. There is no reason why a local or general neurosis should not alter a secretion to such an extent that it will become less permeable and will result in the local accumulation of such a secretion. Likewise, the theories advanced by Dr. Dyer that the disease is almost invariably met in heavy smokers and is very common in warm climates are not at variance with the histopathologic picture of Dr. Sutton, which I believe is practically conclusive. It now only remains for us to investigate pompholyx from the point of view of the chemolysis of this particular secretion, through which we may reach the final solution of the etiology of pompholyx and perhaps many other of the vesicular eruptions. We may learn that it is due to some organism which produces some chemical change in the secretion, or that perhaps this alteration is the result of a nervous disturbance. This problem still remains for us to solve, but whatever its solution, I do not think that it will alter the histopathologic findings of Dr. Sutton.

Dr. Everett S. Lain, Oklahoma, Okla.: I wish simply to say a few words touching on the treatment of pompholyx. About three years ago a patient was referred to me who suffered from recurrent attacks of pompholyx. One day when I was out of the city my assistant, unintentionally, gave the patient a massive dose of the Roentgen ray, somewhat similar to the treatment described by Dr. MacKee. The immediate result of the treatment was rather severe, but the patient has been free from attacks of pompholyx since.

Dr. Joseph Zeisler, Chicago: I am afraid that not all of us who have taken part in this discussion have had the same affection in mind. Sweating feet, for example, I do not regard as pompholyx, although hyperhidrosis of the feet may be complicated by blisters. I saw many such cases during my service in the army, but I do not class those cases as pompholyx, nor do I call the formation of small vesicles occurring on the hands as the result of summer heat pompholyx. Dr. Sutton's paper referred to pompholyx proper and not to something else.

Dr. Richard L. Sutton, Kansas City, Mo.: I do not think that Dr. Dyer and I are so far apart clinically, after all. The fact that the majority of his cases occur in tobacco-users, the frequency of the disease in midsummer, and the line of treatment suggested by him all serve to bear out this contention. Nervous breakdowns occur oftener during the hot months than at any other time; excessive smokers of tobacco are usually neurotic individuals, and but few therapeutists have found strychnin beneficial in the treatment of the known disorders of the coil-glands. In New Orleans the majority of the women go north for the summer; hence the preponderance of male patients is readily explained.

Dr. Pusey's assertion that practically all sufferers from pompholyx are also afflicted with hyperhidrosis may hold good in his clientele; it does not in mine. Fully one-third of my pompholyx patients had never been troubled with disturbances of the sweat-glands of the hands or feet at all prior to the date of consultation. The chemical characteristics of the vesicle contents were so thoroughly investigated by Robinson (whose findings have been confirmed by the vast majority of later observers), that I considered the matter closed. In a measure, I agree with Dr. Simpson: all medical men are subject to errors of judgment when it comes to questions of diagnosis, and I have found the majority of dermatologists exceedingly human, after all. I am afraid that Dr. Ravitch misquotes the late Professor Crocker. If Dr. Ravitch will carefully read the reference cited, I am sure that all his doubts regarding the matter (in so far as Radcliffe Crocker's conclusions are concerned) will speedily vanish. Change of climate, particularly if a cooler temperature is selected, undoubtedly benefits many cases of pompholyx, just as it does other neurotic disorders, but one of the worst cases of plantar hyperhidrosis I have ever seen occurred in a professional iceman. If Dr. Zurawski's suggestion regarding the "everglade" character of the superglandular epidermis were true, the iodid solution should penetrate the "marshy" tracts as readily as does the fluid in which it is dissolved, and the contents of every vesicle should show traces of the drug. Inasmuch as only one of them did, I am forced to acknowledge that I believe that the contamination was accidental and not pathognomonic.

CONGENITAL STRICTURE OF THE PROSTATIC URETHRA

WITH BLADDER HYPERPLASIA, URETERAL DILATATION AND MULTIPLE ABSCESSES OF BOTH KIDNEYS

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Visiting Pediatrician to St. Joseph's Hospital; Visiting Physician to Rhode Island Hospital, Outpatient Department, Diseases of Children; Visiting Pediatrician to St. Vincent de Paul Infant Asylum
PROVIDENCE, R. I.

Congenital stricture is described as an occlusion of the urethra which may occur at three different places: first, at the meatus; second, at the outer limit of the fossa navicularis, and third, at the membranous urethra.

None of the text-books describe a stricture of the prostatic portion. Keyes[1] says that stricture in the deep urethra is exceedingly rare; one text-book[2] denies its existence below one-fourth inch from the meatus. Such strictures are caused by inaccurate apposition in the embryo of separately developed sections of the urethra. The stricture is endodermic in origin.

Guibe[1] relates an interesting fatal case in which the stricture admitted only a needle. Stricture of the meatus and fossa is quite common and is often overlooked because it gives rise to few, if any, symptoms.

The case I wish to report occurred in my practice and the patient died in the seventh week of uremic convulsions.

REPORT OF CASE

History.—R. W. S., boy, born Sept. 7, 1912, of normal parents, was the first child although the parents had been married thirteen years. Family history was negative. Father was 36 and mother 37 years of age. Mother had had no miscarriages. Child weighed at birth 5½ pounds and on examination was normal-looking except for size. He was breast-fed and seemed to do well for three weeks. During the fourth week the mother took complete care of the child and she noticed that every time she handled the baby she found the diaper moist. She watched him carefully for a week and noticed that he never urinated. The urine would drip from the meatus.

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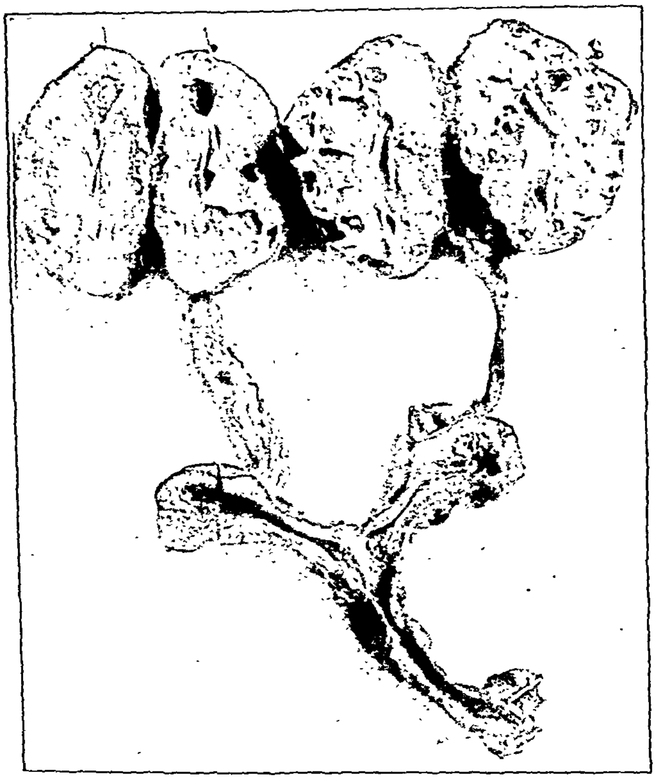
[1] Keyes: Genito-Urinary Diseases, p. 170.
[2] Lydston, G. F.: Venereal and Sexual Diseases, p. 182.

Examination.—My attention was called to this October 6 and a diagnosis of urethral stricture was made. I attempted to pass a small sound and was unable to do so. I then took a small probe from my pocket case, sterilized it and succeeded in passing it into the urethra as far as the prostatic portion and here I met with an obstruction which for several minutes interfered with further progress. I finally succeeded in passing it. As soon as I had entered the bladder a small stream, not more than a teaspoonful of urine, escaped by the side of the probe.

Treatment and Course.—I put the child on hexamethylenamin (urotropin) 1 grain three times a day and passed the probe daily for two weeks. While the probe entered more easily after the first few days, there was no improvement in the condition. The child still continued to pass urine a drop at a time. Daily examination of the abdomen did not elicit any symptoms of bladder distention. About this time, sixth week, the kidneys could be palpated and were growing larger daily. October 20 the abdomen was very much distended, and the child had considerable dyspnea. His weight at this time was 5 pounds 12 ounces. October 21, dyspnea was still present. Abdomen was distended and remained so after soapsuds enema. October 22 progressively worse. October 23 he had frequent convulsions from early morning until 11:30 a. m., when he died.



Congenital stricture of the prostatic urethra. Hyperplasia of bladder. Ureteral dilatation and multiple abscesses of both kidneys.

Necropsy.—I obtained permission to make a *partial* postmortem examination. This I did five hours after death. The abdomen was greatly distended and of a bluish tint. The peritoneum and intestines were normal except for a large amount of gas. Both kidneys were much larger than normal. Both ureters were large and sacculated, especially the right. The bladder was small, hard and seemed to be a solid mass about the size of a large olive. I carefully dissected out both kidneys, ureters, bladder and penis in mass.

MEASUREMENTS AND WEIGHTS

	Length, in.	Width, in.	Depth, in.	Weight, oz.
R. Kidney	2¾	1¾	1¼	2
L. Kidney ...	2¼	1¾	1¼	1½
R. Ureter	4	½	...	...
L. Ureter	4	¼	...	...
Bladder	1½	⅞	1	...

The urethra was carefully split along its dorsal surface from meatus into the bladder and a stricture at the prostatic portion was found which measured one-quarter inch in length. The bladder when opened resembled a dilated canal surrounded by dense fibrous tissue and would hold about one dram. Both kidneys were large and nodular, containing many cysts and when opened showed a chronic diffuse nephritis.

176 Academy Avenue.

USE OF PALATE MUCOUS MEMBRANE FLAPS IN ANKYLOSIS OF THE JAW DUE TO CICATRICIAL FORMATIONS IN THE CHEEK

JOHN B. MURPHY, A.B., M.D., LL.D.
CHICAGO

In two cases of ankylosis of the jaw due to cicatricial formations in the cheek following destruction of tissue I resorted to a method of flap-interposition which, so far as I know, is original. It is well known, I believe, that in all my arthroplasties I have favored the pedicled flap for interposition between the ends of the bones. Therefore, when the first of these two cases of ankylosis of the jaw came under my observation, I endeavored to secure a pedicled flap for interposition to prevent a recurrence of the ankylosis.

The flap in the first case was removed from the hard and soft palate of the patient and consisted of the mucosa and submucosa. It was a pedicled tongue-shaped flap and it was swung outward so as to cover over the denuded bony surface of the upper jaw, which had been formed when the jaws were chiseled apart. The result exceeded my expectations. The flap lived and the ankylosis did not recur. The result was so good that I was led to resort to the same procedure in a second case of ankylosis of the jaw.

REPORT OF CASES

Case 1.—C. D., girl, aged 10, came to Mercy Hospital, December, 1912, on account of inability to open the mouth. The jaws were fixed so tightly that there was absolutely no motion.

History.—About Sept. 1, 1909, the patient contracted typhoid. During the three weeks of the disease she complained of a sore mouth. The mother, when she examined the mouth, noticed a small, reddened elevated patch about half the size of a pea on the buccal mucosa of the right cheek opposite the second or third lower molars. The patient complained of toothache in that region. She had the habit of putting her fingers in her mouth and working her teeth loose. In the course of a few days she had succeeded in pulling out the second and third inferior molars. A short time after the onset of this mouth trouble (the mother thinks it was only a few days or a week) it was noticed that the elevation on the buccal mucosa had increased to about the size of a silver dime. Its surface was raw and a yellowish fluid was discharging from it. This mass was excised. Following the excision the patient suffered from stiffness of the jaws, which increased in degree, until at the end of the third week she was unable to open her mouth. There was considerable tenderness on pressure over the right temporomandibular articulation.

The following week an attempt was made to relieve the fixation. An incision extending from the temporomandibular articulation downward to the angle of the lower jaw exposed the ramus. It is said that the ramus was scraped and a drainage tube inserted. A yellowish fluid was discharged for about two weeks and during this time there was motion in the jaw. After the discharge ceased the jaw became fixed again and three weeks after the operation it was absolutely immobile. Three weeks later (six weeks after the operation) a red painful swelling appeared on the jaw midway between the angle and the symphysis. The swelling was incised and its contents evacuated. A yellowish fluid was discharged from it for about a week. The abscess healed, but ruptured spontaneously about nine days after the discharging sinus had closed.

Examination.—When I saw the patient she was unable to separate her jaws even a fraction of an inch (Fig. 1), but she had no pain nor was there tenderness on pressure over the temporomandibular joint or elsewhere. Several incisor teeth had been extracted to permit of feeding. An examination of the roentgenogram showed that there was not a bony ankylosis, but the type of operation which I had decided to perform remained the same, no matter whether the ankylosis was bony or fibrous.

Treatment.—Dec. 10, 1912: In order to expose the field of operation freely, an incision was made extending from a point 1 inch in front of the ear on a line with the lower border of the external auditory canal, downward to the angle of the mouth, describing a curve with its convexity downward toward the angle of the jaw. By means of retractors the jaw bones were well exposed, and my original interpretation, that this was a fibrous extra-articular fixation and not a bony ankylosis, was confirmed. The alveolar process of the inferior maxilla had been removed in large part at the previous operation. I completed the removal of the alveolar processes of both the upper and the lower jaws by means of a flat chisel, and also divided the attachment of the temporal muscle to the interior aspect of the ascending ramus of the inferior maxilla. The jaw immediately dropped.

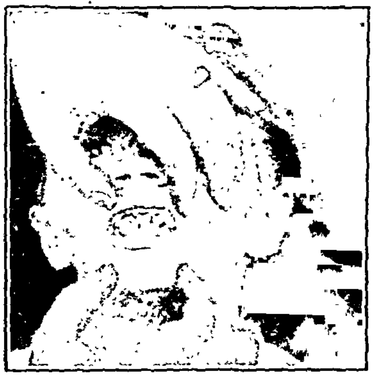


Fig. 1, Case 1.—Fixation of the jaws before operation

A tongue-shaped pedicled flap was then dissected free from the palate. The base of the flap was toward the back of the mouth. The flap consisted of the mucosa and part of the submucosa. The inner limb of the incision being made about a quarter of an inch shorter than the outer limb, the base of the flap formed the base line of an obtuse angle, whose upright line was formed by an imaginary median line running through the center of the hard palate. Therefore, when this flap was turned outward, so as to cover the denuded area in the upper jaw where the bone had been exposed by the chiseling, there was absolutely no contraction or interference with the circulation in the flap, which might have been caused if I had not taken this precaution in forming the angle of the base properly. Even then, I feared that gangrene might occur, but it did not. This flap measured about half an inch in width and an inch and a half in length. Its sides were sutured with very fine catgut to the free margins of the gums and the tip was anchored to the cheek. A small pledget of antiseptic gauze was inserted between the jaws, to serve as a packing as well as to prevent, at least in some degree, infection of the detached flap and raw tissues. The mucous membrane of the cheek was then very carefully reunited and approximated with fine catgut and the skin incision was closed with horsehair. The wound was dusted with bismuth subiodid powder and a plain sterile dressing applied.

The patient recovered promptly from the operation, suffered very little pain and was able to take liquid diet without any very great effort. A pledget of gauze folded on itself a number of times was placed between the jaws to act as a wedge. About a week after the operation, a wedge-shaped piece of wood was substituted for the gauze pad and the patient was encouraged to spread the jaws as much as possible during the day.

Result.—When the patient left the hospital, about four weeks after the operation, she was able, without assistance, to open her jaws freely for a distance of about an inch (Fig. 2). The wound in the cheek had healed by primary union. The horsehair stitches were removed from the skin on the tenth day. The disfigurement was not great. March 10, 1913, the patient wrote that she could open her mouth about an inch and a half.

Case 2.—*J. W., man, aged 28, entered Mercy Hospital, Feb. 27, 1913, on account of inability to open his mouth.*

History.—In July, 1909, he had an abscessed molar tooth in the right upper jaw which was quite painful and swollen. He did nothing for three weeks; then his physician opened the abscess from within the mouth and cauterized it. A week later the whole right side of his face was swollen. An external incision was then made through the cheek to reach the abscess but little pus was evacuated. Four days after this operation he noticed that there seemed to be some obstruction, other than that which caused the pain, which prevented him from keeping his jaws separated. This condition became steadily worse. In December, 1912, he was scarcely able to open his mouth at all. He said that something seemed to be holding his jaws together, but that the mandibular articulations were never sore or swollen. He had no distinct chill at any time. About one year after the onset of the trouble (August, 1910) he had an operation performed within his mouth to relieve the ankylosis, but it proved a failure.

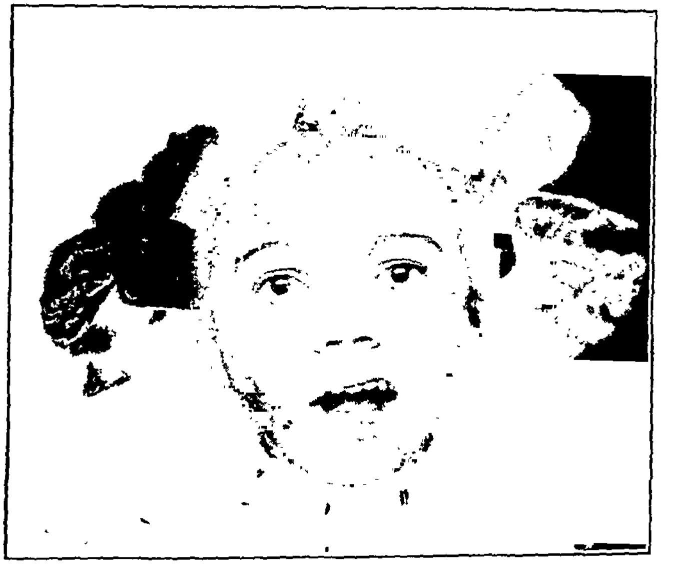


Fig. 2, Case 1.—Degree of voluntary separation of the jaws about four weeks after the operation.

Examination.—The patient had a complete fixation of the jaw. He was unable to open his mouth and on attempting to pry it open, I found that the jaw was thoroughly ankylosed. There was absolutely no motion. The ankylosis was of the extreme exarticular fibrous type. Cicatricial tissue held his jaw fixed. The cicatrix extended clear back to the ramus of the jaw.

Treatment.—Feb. 28, 1912: This cicatricial tissue was carefully divided with scissors and scalpel. In order to prevent the recurrence of the ankylosis by the reformation of the fibrous tissue, I interposed two tongue-shaped flaps, one from the floor of the mouth and the other from the hard palate. By drawing the tongue over to the opposite side these areas were exposed freely. Both flaps were tongue-shaped, about 2½ inches in length and ½ to 1 inch in width, respectively. The base of the flap was directed toward the alveolar process in the case of the upper flap and toward the root of the tongue in the case of the lower one. Both of these flaps were first swung outward to cover over the raw surface where the adhesions were separated. The tips of the flaps were sutured to the inner margin of the cheek. The denuded areas left after the removal of the flaps were left to heal over. All the suturing was done with fine catgut.

Result.—The result in this case was entirely satisfactory. The patient left the hospital five weeks after the operation. He was able to open his mouth unassisted about an inch. Unfortunately no photograph was secured.

3305 South Michigan Avenue.

CREEPING ERUPTION

TWO CASES WITH RECOVERY OF THE LARVAE

GUSTAVE L. RUDELL, M.D.
PLAZA, N. DAK.

Creeping eruption is apparently a very rare disease, and the recovery of the larva producing this curious lesion is rarer; only two report having recovered it. The following two cases, therefore, are recorded, particularly because in one of them, in which there were two of the lesions, both larvae were recovered.

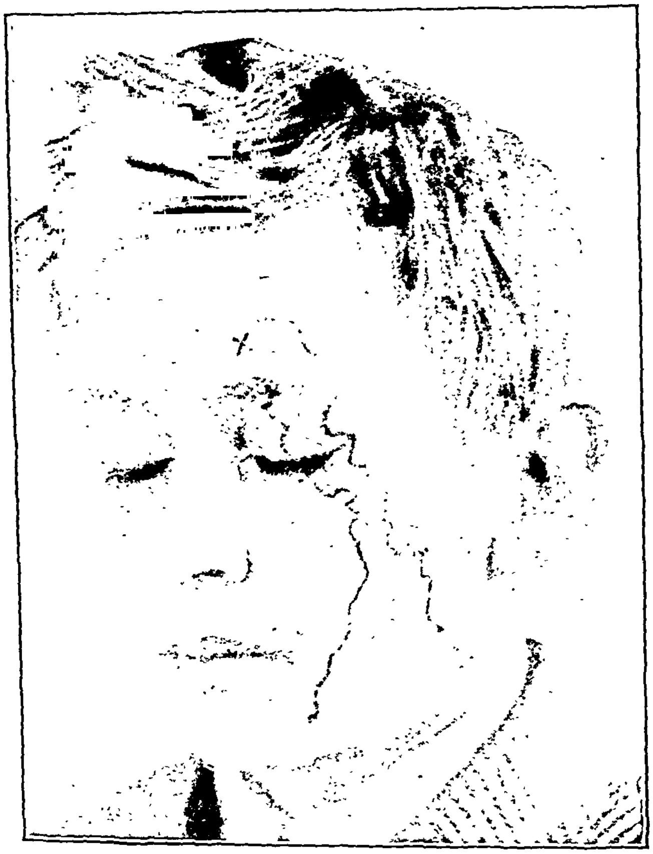


Fig. 1.—Case of creeping eruption. Two larvae started at point marked X, one going down over eyelid and crossing from upper to lower lid during the night. The upper part of each line was intensified slightly with pencil when photograph was taken.

Case 1.—A farmer, aged 45, came to me in the summer of 1911 with an eruption on his left arm running in a tortuous line from his shoulder downward. There was no history of its beginning as he knew only that he had noticed a peculiar itching for some time, probably a week before he discovered the eruption. He waited for about a week before he came to me and by this time the line was about 12 or 13 inches long, the lower end being much inflamed while the upper end gradually faded out into a scaly trace.

I diagnosed it as creeping eruption and made an attempt at recovering the larva. I made a very small incision just ahead of the advancing line, but got a small hemorrhage and failed to find anything. I rubbed the wound and the surrounding surface with a 10 per cent. chrysarobin ointment and when I saw the patient a week later, all traces of the eruption had disappeared.

Case 2.—A farmer boy, aged 13, came to me Aug. 2, 1912. He had an eruption on his face, extending from his forehead downward in two serpiginous lines. He told me that four days before this he felt, as he woke up in the morning, a burning or itching sensation above his left eyebrow.

From this inflamed spot the eruption spread in two directions, one line making a slight curve on his forehead and then extending down over the face; the other line going down through the eyebrow and over the eyelid. During the second night, while the patient was sleeping, the larva had crossed from the upper to the lower lid, whence it proceeded down over the face. On the fourth day the patient came to me and I applied tincture of iodin, trying to eradicate the parasite. Patient called again next day and each line had advanced about an inch and a half in twenty-four hours.

Pressing with a convex lens over the end of the eruption, I could see a small, dark spot; this was possibly 2 mm. from the inflamed end of the line. Using a small cataract knife, I made a small flap-like incision in the cuticle directly in front of the dark spot, the cut not being deep enough to strike any blood-vessels; and as I lifted the flap the larva emerged from its burrow so that I could pick it up with the end of the knife. This was done under a fairly strong magnifying lens, and I exercised the utmost care not to injure the larva.

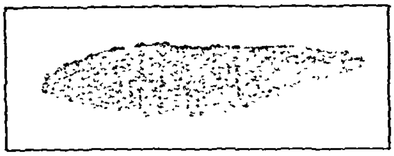


Fig. 2.—Larva from case of creeping eruption (from microphotograph × 40).

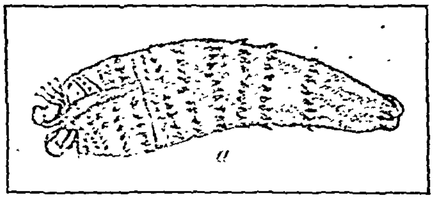


Fig. 3.—Larva of creeping eruption × 40. (Sokolow's drawing from Pusey's "Dermatology.")

Placing the little parasite under the microscope I could study its movements, which were limited to a maggot-like wriggling. The short bristle-like appendages near the head were in a constant, slow motion, while those that surround the body in rings did not show any motility.

I mounted the larva in glycerin and this seemed unfortunately to shrink the outer covering and to some extent destroy the smoothness that so beautifully outlined the larva. The general outline and main characteristics, however, are well preserved.

I proceeded with the second line of the eruption in a similar way and recovered the second larva in the same way. The two were of practically the same size and shape.

Cervical Ribs.—The rib series, which is complete in limbless animals, tends to become incomplete with the development of limbs. From the point of view of comparative anatomy the ribless neck and loins are the outcomes of the functional perfection of the pectoral and pelvic limbs, or, in other words, the ribs were stripped from the vertebral column opposite those segments from which the limbs arose. The relation between plexus formation and rib development is an interesting one, for it has been shown that these two processes are anatomically antagonistic. Clinically speaking, it is not easy to diagnose between symptoms related to the presence of a cervical rib or to pressure effects on the brachial plexus from a first thoracic rib, but radiography will easily settle the question. The aid of the surgeon is seldom called for, except in those cases in which pain is a marked feature or in which paralysis and atrophy of muscle are obvious. Actual removal of the rib is not always necessary, division of the continuing band being sufficient in many cases.—*Med. Press and Circular.*

ETIOLOGY AND SIGNIFICANCE OF PERICOLIC MEMBRANES *

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The cecum and its near relatives and coadjutors, the ascending and transverse colons, have recently received a generous share of attention from surgeons, internists and roentgenologists, displacing in this respect the appendix, whose lesions, symptoms and treatment have by common consent been received into the accepted dogma of the profession. Among the interesting questions before us is that concerning the etiology and significance of certain membranous structures which are frequently found enveloping these organs in whole, or in part, and are designated by such terms as pericolic membranes, membranous pericolitis, parietocolic membranes and Jackson's membrane.

Whatever degree of importance may be assigned to these structures in the future by our riper judgment, it must always be a source of pride that the American profession has contributed so largely to their elucidation. Many times must they have been observed in the post-mortem and dissecting-room before Virchow in 1853 described them and speculated on their significance. Lane in his earlier papers subsequent to 1903 speaks of them in general terms, undoubtedly confusing types of varying cause and importance, and they have been mentioned specifically in a number of anatomic studies; but it remained for Jackson in 1909 to formulate them as a definite clinical entity, with a definite symptom-complex and plan of treatment.

Jackson's paper with its contained account of the pathology by Hall, deservedly ranks as a classic for students of these conditions. In Germany, Hofmeister, Wilms, Fischler, Klose, Stierlin; in America, Binnie, Martin, Mayo, Crossen, Gerster, Connell, Pilcher, Frazier and Flint; and in England, Gray and Anderson have contributed important papers. Within two months, long after the preparation of the present paper was begun, articles by Eastman and Connell have appeared which largely anticipate the conclusions presented herein. Nevertheless, so much confusion of terms and difference of opinion still exist, that it seems still justifiable to bring forward further evidence.

No one can review the literature on this subject without feeling certain that much of the confusion is due to the fact that conditions of widely different origins are erroneously supposed to be identical. In my opinion these membranes may be divided etiologically into two groups: (1) congenital, and (2) those due to peritoneal irritation. Under the second heading may be included, unless indeed they deserve to constitute a class by themselves, the omental pseudomembranes due to the adhesion of the border of the omentum to the parietes, most often on the right, and thus covering the ascending colon and cecum. This adhesion is doubtless due to the same irritation responsible for the other cases included under Class 2. No one, I presume, doubts the passage through the intestinal wall of irritating substances, whether bacteria or their products or more purely chemical irritants, without gross perforation. The region of the appendix is of course the most common example, but more striking instances of the response of the peritoneum to this type of irritation is seen in the extensive membranes covering the site of certain non-perforating gastric and duodenal ulcers and spreading far over adjoining viscera, or those associated with a malignant adenoma of the colon or with diverticula of the sigmoid. The process is apparently partly a proliferation and partly a floating up of delicate layers of the peritoneum with the formation of large lymph-spaces and new blood-vessels. I confess to some skepticism as to the passage of irritating bodies through the intestinal wall in the absence of ulceration, or of some other condition more evidently harmful than stagnation. The weight of experimental evidence seems to be in favor of it, yet it is well to remember that the alimentary tube is designed to contain, to retain for a considerable time, and to excrete substances undergoing chemical or bacterial decomposition, without permitting their passage through its wall. If fecal stagnation and transudation of irritants cause these membranes, why do we not see them on the descending colon and sigmoid; or, if it be asserted that they exist in these situations, why do we not find them on the under surface of the transverse colon? A third hypothesis as to etiology is the mechanical theory, chiefly championed by Lane and Fagge, which as I understand it imputes to these membranes a teleologic significance, regarding them as developed to fix viscera which are insufficiently supported. Here again, it is probable that different structures are under consideration. Probably all will admit that normal peritoneal fixations and these membranes also, if present, will become thickened and fibrous in response to the abnormal drag of a dilated, atonic and prolapsed cecum.

To return to the first group—the membranes of congenital origin—this is composed, according to my belief, of membranes of the type so ably described by Jackson and Hall. The evidence of their congenital origin is almost indisputable. The thin, diaphanous veil, springing from the posterolateral abdominal wall, on the right, overlying in varying degrees the ascending colon, but so loosely attached to it that it may be divided and lifted up with scarcely any bleeding, leaving an apparently normal colonic peritoneal surface, and the absence of any thickening or hyperplasia or change in consistency of the colonic wall, constitute a picture quite different from our conception of an inflammatory process. Moreover, this type of membrane seems to occur solely in this region. Gerster, Lane, Anderson and Gray speak in rather general terms of membranes involving the cecum, ascending colon, hepatic and splenic flexures, descending colon and sigmoid, but the reader is left in some doubt as to what type of membrane is meant. The great majority of writers, notably Jackson, Connell, Frazier, Flint, Pilcher and Eastman, state or imply that the type of membrane under consideration is confined to the right colon. This is highly suggestive of a developmental origin, for however perverted a function we ascribe to the cecum and right colon, as a cause of pericolitis, it is hardly conceivable that in all cases the rest of the colon may not share in the condition and form similar membranes.

The apparently overwhelming proof of the developmental origin is, however, to be found in the study of the fetus and new-born infant. Jackson, in a recent paper, says that he knows of no observations of pericolic membranes in infancy or childhood; meaning, probably, in the living subject. My own experience has given me a contrary impression; I have seen a well-

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space this article is abbreviated in The Journal by omission of the bibliography. The complete article appears in the Transactions of the Section and in the author's reprints.

marked pericolic veil in a child aged 12, and examination of new-born infants has duplicated the experience of Flint, Connell and Eastman, expressed in their recent convincing papers. Flint found in two out of three embryos the undescended cecum attached by veil-like membranes, and well says that unless we accept the unproved theory of fetal peritonitis, these membranes must be considered but variations of the normal. He might well have added "unless we are willing to believe in cecal and colonic stasis in the fetus as the cause of peritoneal irritation, these membranes must be regarded as developmental." Eastman establishes the apparent identity of the "parietocolic fold" of Jonnesco and Juvara, and the "bloodless fold" of Treves with Jackson's membrane, and states that among twenty-eight fetuses of over 6 months, these membranes were found in five and nine cases, respectively.

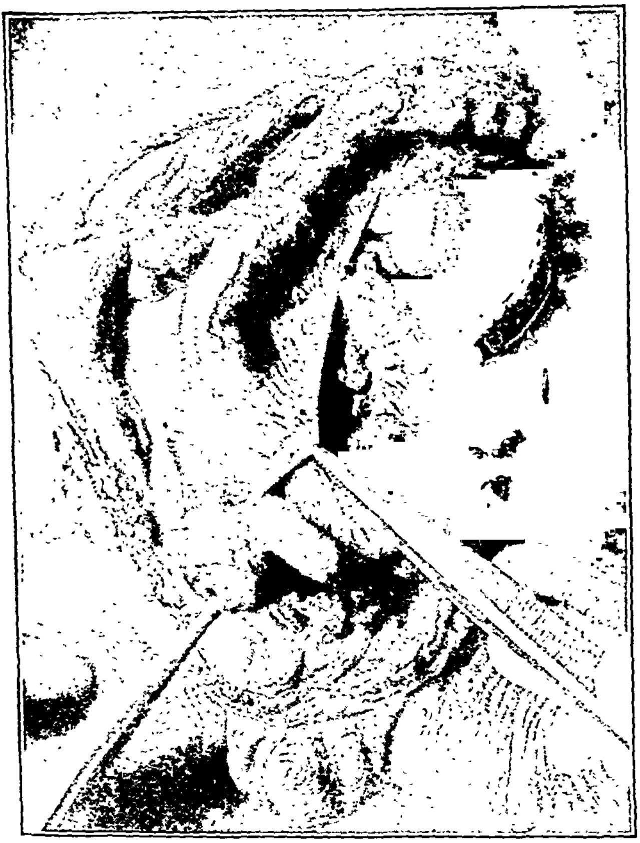

Fig. 1.—Abdomen of a new-born infant showing a Jackson's membrane covering the ascending colon. The rudimentary omentum may be seen at the free border of the transverse colon, unrelated to the membrane.

In an examination of thirty still-born infants, ranging from approximately 6 months to full term, in the anatomic laboratory of the Harvard Medical School, we found in four instances characteristic veil-like membranes extending from the parietes over the hepatic flexure and ascending colon (and in one instance over the cecum) and fusing with the peritoneum of the colon near its mesenteric border (see Figs. 1 and 2). In three of these instances there were other developmental aberrations present, such as lack of normal fixation of the cecum, a continuance of the gastrohepatic omentum to the right between the duodenum and gall-bladder, a Meckel's diverticulum and an undescended testicle. This coexistence of other variations may be considered significant in the etiology of the veils. Dissection of seventeen younger embryos proved inconclusive, because, having been preserved in alcohol or formaldehyd solution, the peritoneal reflections were so friable and altered in appearance as to cast doubt on the accuracy of the observations; but at least a well-founded suspicion was entertained that three of these presented pericolic membranes. It will be noted that these percentages correspond roughly with those of Flint and Eastman.

Granted that membranes of the type under discussion are confined to the cecum and proximal colon, and are developmental, it would seem that the exact method of origin must be involved in the rotation and descent of the cecum from its first point of fixation beneath the liver. This process has been reviewed so often of late that it is well understood. The suggestion of Mayo that the cecum insinuates itself beneath a fold of parietal peritoneum and pushes it downward before it, while plausible enough on account of the laxity of the latter, is yet rendered improbable, as Jackson says, by the fact that the cecum itself is frequently not covered. The adhesion of the omental edge to the parietes over the cecum, before its descent, might closely simulate this condition. On the whole, the most satisfactory hypothesis attributes the process to the twisting of the cecum and proximal colon on its long axis after primary fixation and during descent. When the cecum, by the rotation of the colon on the root of the mesentery as a fixed point, passes to the right beneath the liver, the ileum enters it from the right, and the twisting which brings it ultimately to enter from the left probably occur [illegible]lly in the most natural way, so as to l

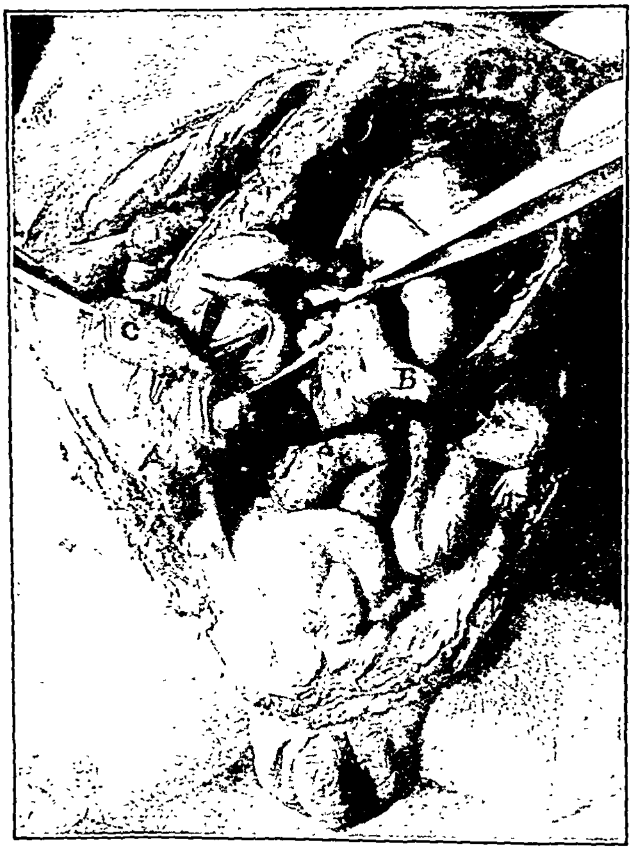

Fig. 2.—The same subject with the cecum of fetal type and appendix raised to show a genitomesenteric fold connecting the mesentery of the terminal ileum with an undescended testicle. The small intestine has been removed except the terminal ileum, whence may be seen springing a Meckel's diverticulum. *A*, undescended testicle; *B*, Meckel's diverticulum; *C*, cecum.

the recently attached parietal peritoneum behind the ascending colon, which process would obviously be obscured by further adhesion. It is reasonable to suppose that under certain conditions the twist may occur in the opposite direction, which would have the effect of drawing the attached peritoneum over the colon in such a way as strongly to suggest a Jackson's membrane. It is not strange that proof of this is hard to obtain, as was the case in Connell's investigations. In one instance I found the ileum entering from the front in such a way that a twisting outward, backward and inward to its adult position would be very improbable, while the more probable twisting inward and backward would have drawn the parietal peritoneum over the ascending colon like a Jackson's membrane.

The importance of the exact etiology of these structures is chiefly to aid us in estimating their clinical significance. It may be agreed at once that any membrane, whatever its origin, which operates to fix or confine the appendix in such a way as to interfere with the proper drainage of its lumen into the cecum is a menace to the life of the individual. Similarly, membranes which confine the colon, and thus impair its peristalsis, must be assumed to be noxious. But do these slender, tenuous veils of congenital origin suggest such confinement? It may be doubted whether such slight fixation is often of much importance. Although the analogy is not complete, the condition may be compared with that of the duodenum, which, broadly and firmly fixed behind, overlapped by the border of the pancreas, crossed at its second portion by the transverse mesocolon and at its third portion by the root of the mesentery, yet discharges its function without embarrassment save in rare instances. The cecum has acquired a bad name—it is variously termed a sink, a sewer, or a cesspool. Perhaps it is possible to be carried too far in our conception of the proximal colon as a pool harboring dangerous toxins and a bacterial flora which, at the slightest retardation of its flow, will be absorbed into the circulation or pass through the bowel-walls and cause a local inflammation. It may be profitable to return to the teachings of physiology and recall that the cecum and proximal colon are homologous with a portion of the alimentary tract in the herbivora in which stasis is essential to proper digestion; that in man, who is in part herbivorous, the intestinal contents, after a rapid passage through the jejuno-ileum, are poured into the cecum still containing half of the fluids and a material portion of the absorbable solids which have been ingested, and that Nature, through anatomic arrangement and antiperistalsis, seems to emphasize the desirability of a retarded flow through this portion of the bowel.

The diversity of therapeutic measures proposed is striking; thus Wilms corrects a mobile cecum by placing it in an extraperitoneal pocket, while Fagge denies the value of this procedure. Hofmeister and many others mobilize the ascending colon (and presumably the cecum) by dividing parietocolic adhesions, while Klose fears the mobile colon and sutures it to the wall. It is noteworthy that among the many reported cases of plastic operations on pericolic membranes the great majority were subjected also to a removal of a suspected appendix or to operations on the pelvic organs, or to various other procedures, so that it is difficult to estimate the effect of freeing the membranes alone. Moreover, few of these cases have been reported in detail as to results. There remain, however, a number of cases presented by such careful observers as Jackson, Pilcher, Flint and others in which the familiar symptom-complex of pain, distention, tenderness, constipation, mucous discharges and later sequelae were relieved by simple division of pericolic veils.

On the clinical side my own experience is as yet inconclusive. It consists of seventeen cases of right-sided pericolic membranes observed since attention was directed especially to these conditions. Of these, six were associated with and presumably were caused by a recurrent subacute appendicitis, and presented no distinct clinical picture of their own; two were similarly associated with duodenal ulcers, and one with an inflamed Meckel's diverticulum. The remaining eleven were of the type of Jackson's membrane previously described; in none of these were any lesions of the viscera noted, except the unrelated ones for which the operation was undertaken, nor were there swollen glands or other evidences of inflammation as described by Hofmeister. In eight of these eleven cases there were no symptoms attributable to the membranes, which were discovered merely in the course of a routine exploration; in the remaining three cases there was right-sided discomfort, indigestion, flatulence and moderate constipation. In one of these, a woman, the abdomen was closed without disturbing the membrane, and general measures, as urged by Martin and Coffey and others, were instituted with marked improvement. In the second case in the same sex, the membranes were divided with relief, up to the present, of all symptoms except the constipation, and in the third case, a man of neurasthenic habit, the operation gave no relief.

The evidence from the laboratory and the operating-room here presented, and a study of the work of others, has given me the very strong impression that the veil-like pericolic membranes of the type described by Jackson are congenital variations, occurring in at least 10 per cent. of individuals and causing in the majority of instances no symptoms whatever. In the infrequent cases in which there is satisfactory evidence that they constrict and obstruct the function of the colon, they should be divided, preferably with the cautery protected by a spatula introduced beneath the membrane, as advised by Hofmeister. Jackson's recent reported experience in two cases gives us ground to expect that after division they may not form again. The other type of membrane, whose cause is either inflammation spreading from some visceral lesion, or, as I think less likely, peritoneal irritation from intestinal stasis, are more likely to cause symptoms and require operative relief. Further progress in these problems will follow the careful analysis of the symptoms and living pathology of many cases by many observers, and above all the conscientious interpretation of after-results.

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ABSTRACT OF DISCUSSION

Dr. Jabez N. Jackson, Kansas City, Mo.: The origin of the pericolic membrane is of as much mystery to me now as it was when I first saw it. The view is generally held, however, that this vascular membrane is found frequently about the right side of the colon, and that it is associated with a definite symptomatology. I am satisfied that there are a great many persons who have a membrane caused by the vascularity common to this condition, and who do not manifest any symptoms. The membrane in itself is not productive of symptoms at all until something takes place in that membrane. It is a sort of mechanical obstruction either to the appendix, or to the bowel itself, anchoring it in the lumbar fossa. I am also inclined to say, that the congenital theory as to the origin of the membrane will generally explain the conditions present, although I have seen one or two instances in which I was perfectly satisfied that the case was of inflammatory origin. In the majority of instances this condition is characteristic in the fact that the cecum is rarely involved. The membrane begins just above the cecum and extends upward to the hepatic flexure, to about the beginning of the attachment of the omentum. Keiler first told me that this membrane was pulling down a layer of descending colon, so that I am inclined to believe that it is a congenital membrane, although Eastman's theory, that the condition is inflammatory, is also tenable. I do not believe that it is inflammatory in the sense that it comes from a peritonitis. I should say that this membrane formed as the result of an irritation caused by the obstruction of the toxins in the ascending colon. In inspecting the abdomen after death from poisoning by bichlorid of mercury, no change is found in the stomach or small intestines, but in the ascending colon up to the hepatic flexure the tissues are perfectly blue, showing that that particular part of the intestine has a tendency to absorb at least one toxic substance, namely, mercury. This part of the intestine may be the one that absorbs the toxins of low-grade bacteria, and that might account for the toxic origin of the pericolic membrane. I feel sure that there are cases in which the membrane develops sufficiently and assumes a characteristic clinical course, so as to set up a definite train of symptoms. When we operate in these cases we always find the membrane about the colon.

DR. F. GREGORY CONNELL, Oshkosh, Wis.: I am glad to see that the question of the etiology of this condition is being brought forward and emphasized, because the more important aspect of this condition is its cause. If this membrane formation is secondary to an inflammation, either in the appendix or in the mucosa of the colon, then an operation outside of the bowel which does not remove the primary cause in the lumen of the bowel surely would not lead one to expect an entirely satisfactory result. I want to agree emphatically with Dr. Cheever in his conclusions regarding the congenital development as a cause of this condition. The fact seems to be not strongly emphasized; the fact is lost sight of that there may be coincident inflammation and defective development which would account for this condition in a typical case in which Jackson has so beautifully described the pericolic membrane. He says that the cecum is not ordinarily involved, but that when it is there may be a secondary or resulting inflammation, and that this inflammation secondary to defective development would account for a large number of these cases. There is no doubt that these kinks and membranes are present and cause symptoms. Some four years ago I removed gallstones from the gall-bladder, and also removed an acute appendix. There was a typical pericolic membrane, as described by Jackson. It was entirely pericolic; that is, it did not involve the cecum or appendix. This was some years ago, when we did not know as much about this membrane as we do now, and, on account of draining the gall-bladder, I was afraid of a retroperitoneal infection, and therefore did not touch the membrane. The patient, however, did not improve after the operation. Some six months later I operated again, and found that this pericolic membrane had become more firm and leathery. The blood-vessels in it had entirely disappeared, and there were streaks of connective tissue. There were no postoperative adhesions from the removal of the appendix. There was a marked dilatation of the cecum below this constricting band. The pericolic membrane was divided, the cecum was fixed to the posterior parietal wall, and there had been a marked improvement in the case. Another case was rather unusual in that a volvulus or torsion of the cecum secondary to a pericolic membrane was present.

DR. MARTIN B. TINKER, Ithaca, N. Y.: It seems to me that the point brought out by Dr. Cheever near the close of his paper, that these membranes rather rarely cause serious trouble, deserves emphasis. I have an impression that these membranes clash with simple ovarian cysts, which in times past have received so much attention and rarely caused any trouble. In clinics in which much abdominal surgery is done we rarely see interference with these bands. I have seen a great deal of surgery in the Mayo clinic. I have seen Dr. Ochsner and Dr. Crile, and others all over the country, operate, and I do not recollect having seen any of these men ever interfere with one of these bands. It seems to me that while there may occasionally be cases in which the bands might give rise to trouble, they really in the majority of instances offer no excuse for needless surgery, and in the hands of some men more is done with these bands than circumstances require.

DR. J. W. DRAPER, New York City: I was struck by what Dr. Jackson said in regard to the localized condition of the inflammation in the colon in cases of poisoning by mercury, because we have observed practically the same thing, namely, the localization of the toxemia of intestinal obstruction in dogs. Dr. Wallace has shown exactly the same thing in toxemia following large injections in animals of diphtheria toxins. It is quite easily conceivable that this may have a very important bearing on the subject.

DR. G. M. GRAY, Kansas City, Kan.: I merely wish to make a suggestion in connection with these bands which we meet so often. In every case in which there is a marked ptosis of the cecum and ascending colon these bands are present, and, to my mind, and as suggested by Dr. Coffey, they are really Nature's effort to protect a falling bowel. The fact of their always being met on the right side of the abdomen would also indicate that they are due to irritation of the falling cecum. So long as the colon remains on the normal shelf in the abdomen, we do not meet with pericolic membrane. When it leaves that shelf and ascends into the pelvis, this membrane is always present. I have seen many cases of ptosis of the cecum and ascending colon, and I do not recollect a single case in which these bands were not present. I attribute to the descent of the colon the irritation from the stasis that is produced in the bowel by this ptosis and the production of these bands, at least, in a large number of cases. They have no particular significance except that they are often protective and the individual might suffer more if they were severed.

THE PART PLAYED BY FUNCTIONAL DISORDERS IN THE PATHOLOGY OF THE STOMACH *

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Views regarding the pathology of the stomach are much unsettled at present. A pronounced conflict is particularly evident in the widely differing valuation of disorders of the gastric function. This proves all the more confusing because for the last forty years functional disturbances have held the central position in the discussion of gastric diseases. An entire gastric pathology was built on the knowledge of these functional disturbances, after its foundation-stone was laid by Kussmaul when he introduced the stomach-tube. Up to that time, in accordance with the prevalent tendency of the period, the pathology of the stomach had been exclusively pathology of structure. It was confined to the study of anatomic changes, of such lesions as ulcer, cancer, syphilis, tuberculosis, malformations, the different forms of gastritis, etc. The descriptive anatomy of these findings does not yield any information as to the functional activity of the viscus. It was the use of the stomach-tube which, for the first time, furnished a reliable method of studying gastric function and its disturbances. The new method was eagerly employed by numerous investigators, and

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* President's Address, read at the Sixteenth Annual Meeting of the American Gastro-Enterological Association at Washington, D. C., May 5, 1913.

during the period of renaissance which followed Kussmaul's communication there were recorded findings which gave the first reliable information regarding the secretory and motor activities of the stomach and their derangements. The findings of gastric analysis became well-established facts and provided a firm basis for a new pathology, a pathology of function. We became acquainted with the increase, the decrease, and the lack of gastric secretion with its different constituents, hydrochloric acid, ferments and mucus; with motor insufficiency, hypermotility and spasm; with gastric atony and paralysis. The knowledge of these and other functional disorders represents a decided and permanent progress in the pathology of the stomach. It is one thing to report findings, however, and another to interpret them. It was in the interpretation of the newly established disorders of function that grave errors were and are still committed.

Pronounced disorders of secretion were first encountered in connection with organic diseases: Lack of secretion in gastric cancer, discovered by Kussmaul's assistant, von den Velden, and increase of secretion in gastric ulcer, found and thoroughly studied by Riegel. Further investigations demonstrated the occurrence of the same functional disorders without the presence of cancer or ulcer. Here is the point at which the development of functional pathology took a turn in the wrong direction. It is undoubtedly true that functional disorders may occur without anatomic lesions of the stomach or of other organs. Unfortunately, the establishment of this fact led to a very pernicious generalization. With gastric analysis as an easily accessible method, functional disorders were studied for themselves, detached from a possible anatomic basis and without taking into account their relationship to other organs and their disturbances. Through this one-sided consideration the importance of the functional disorder was greatly overestimated and the grave mistake was made of designating each derangement of function as an independent disorder—as a disease *per se*. To make the error still more palpable all these individual functional disorders were described as so many different types of gastric neuroses. The undue emphasis thus given to the disorders of function proved very confusing and misleading and sometimes caused the overshadowing of the anatomic lesions by the functional disturbances with which they were associated. Of this no more convincing illustration can be given than the failure to recognize the presence of ulcer in cases of hypersecretion, when this disorder was stubbornly described by some authors as a pure form of secretory neurosis.

It required a great deal of work to correct such faulty conceptions. Yet it is gratifying to state that this is thoroughly accomplished, and while it is still justly claimed that functional disorders may be of independent character, it is now generally understood that as a rule they are symptoms of disease and that they are associated with pathologic conditions either of the stomach proper or of some other organ, or that they are manifestations of systemic derangements. Although errors in interpretation of the functional disturbances have been well recognized by clinical observers, they have been forcibly demonstrated by abdominal operations. I mentioned before the finding of peptic ulcer in cases of hypersecretion. The operative era of our days has further brought to light the fact that inflammatory processes in the appendix, the gall-bladder, the pancreas and other abdominal organs are often present in cases in which functional disorders of the stomach dominate the clinical picture. As a result of these observations there was a complete change in the valuation of functional disturbances. Here was something tangible, an anatomic lesion which could be demonstrated.

What could be more natural, more convincing than to take the anatomic lesion as the essential part, as the cause of the disease, to which the functional disorder of the stomach played only an inferior, a secondary rôle? As is usually the case when a reaction sets in, the pendulum swung much too far in the other direction and thus we see at present a pronounced tendency to underrate the importance of the functional disorder or to discredit it altogether. In fact, some writers go so far as to claim that the effort to construct a functional pathology has proved a total failure and they propose to eliminate entirely from medical nomenclature all terms pointing to derangements of gastric function. This annihilating attitude is directed particularly toward disorders of function so far as they are disclosed by analysis of gastric contents, while the findings at x-ray examinations are looked on with a more friendly eye. We should, however, remember that x-ray has its principal value in the demonstration of the motor activity of the stomach, regarding which function it gives us better information than does the examination of the gastric contents. Such erroneous ideas on functional disorders are presented so frequently in current literature that it becomes necessary to repudiate them. There is no cause and no justification whatsoever for throwing overboard any of our knowledge of disturbance of function, no matter whether it be acquired by gastric analysis, x-ray or any other method of examination. On the contrary, the finding of organic changes can serve only to enhance the value of the functional disorder, both as a means of diagnosis and as a causative factor in the development of disease, provided we learn to analyze the relation between anatomic lesion and functional disorder. Indeed, the main issue in gastric, as in every other branch of pathology, is to correlate properly derangements of function and of structure. In other words, we must consider pathologic physiology as much as pathologic anatomy when we try to unravel the pathogenesis of gastric diseases. It will not help to solve the intricate problems of pathogenesis if the same mistakes are made now in the interpretation of the anatomic lesions that were formerly made in the reading of the disordered function. Yet that is exactly what confronts us.

In current literature the significance of the anatomic lesion is so strongly emphasized that it completely overshadows the importance of the functional disturbance. Nor is there any lack of undue generalization. For example, it is true that hyperchlorhydria is often associated with duodenal ulcer; on the other hand the much-quoted, sweeping statement coined by Moynihan, that "in *every* case chronic hyperchlorhydria means duodenal ulcer," is just as unwarranted and just as misleading as was the former conception of hypersecretion as a pure secretory neurosis. I know of cases diagnosed as duodenal ulcer, on the basis of Moynihan's statement, in which no ulcer could be found at operation, and I have no doubt that all of you have had such experiences. Chronic hyperchlorhydria is a very common disorder and is met with in very different conditions. I need only remind you of its occurrence in incipient tuberculosis, in gout, in alcoholic gastritis, in chronic tobacco poisoning, in diseases of the nervous system, the heart, the kidneys, etc., to show that the diagnosis of duodenal ulcer can no more safely be based on the presence of only one symptom than can that of any other disease. As a result of undue generalization we find the frequency of certain abdominal anatomic lesions, for instance, appendicitis, greatly overrated as etiologic factors, at the cost of others which are well known as the causes of gastric disorders. There is no organ in the system the functional or organic disease of which will not eventually affect the stomach, a fact which calls for a more complete examination than is usually indulged in by those who take it for granted that "chronic dyspepsia" is almost invariably a manifestation of some anatomic alteration in the abdomen. The most remarkable effect of this faulty conception is the present tendency to disregard entirely primary pathologic changes of the stomach proper as possible causes for the disorders of its function. It is maintained that the stomach is usually unjustly accused, that it is very rarely the primary seat of disease—a rather singular view when we consider that the stomach more than any other organ is constantly subjected to insults which tend to disease by direct action on the viscus. No one doubts the harmful influence of alcohol on the gastric mucous membrane, and I hold that faulty habits in eating likewise frequently cause the various forms of gastritis and with them the corresponding disturbances of the gastric functions.

It is not alone the diagnostic value of the functional disorder, however, to which I wish to call attention, but also the more important question as to how far the functional disorder acts as a causative factor. At present there is very little inclination to accept disorders of gastric function in any way as causative factors. They are usually considered as mere symptoms of diseases. Yet a critical observer, who is not swayed by the fashionable trend of the day, cannot fail to recognize that functional disturbances may play a very decided rôle as causative factors. As an illustration, let us briefly consider the conditions which we find associated with gastric ulcer.

In discussing the pathogenesis of gastric ulcer a distinction is usually made between two problems; first, the origin and the nature of the primary lesion, and, secondly, the factors which make for its further development into an ulcer and which are responsible for its chronicity.

As primary lesions we find described miliary ecchymoses of the gastric mucosa, Beneke's[1] so-called stigmata ventriculi. I shall refrain from quoting the various theories which deal with the formation of these stigmata. On the other hand, I wish to point out as a significant fact that attempts to explain the further development of the primary lesions are based almost invariably on the effect of the two functional disorders, hyperacidity and muscular spasm, which are usually associated with gastric ulcer.

This is well illustrated by a very suggestive article in which Rössle[2] tries to show that gastric ulcer is a secondary disease; in other words, that gastric ulcer is always preceded by some derangement somewhere in the system which through nervous reflex action provokes the primary gastric lesion as well as causes its further development into an ulcer. Rössle quotes experimental evidence (Lichtenbelt,[3] von Yzeren[4]) to prove that irritation of the vagus nerve is here the principal element. It produces the primary lesion by causing spasm of the muscularis mucosa and by thus constricting the small end-arteries leads to ischemia of those parts of the mucous membrane which these arteries supply. The anemic parts may become the seat of miliary hemorrhages, forming ecchymoses. While unprotected by the flow of blood the anemic part or the ecchymosis is digested by an active secretion and an erosion is formed. This is the first stage in the development of the ulcer.

Looking for factors which might be responsible for the occurrence of ecchymoses, Rössle made a thorough investigation of the material at the pathologic institute of Munich and Jena and found ecchymoses associated with a great many different conditions. They were found with inflammatory processes of all the different intra-abdominal organs, including those of the pelvis; surprisingly often with inflammatory processes of the valvular apparatus of the heart and with diseases of the nervous system. They were further regularly noted after all the more serious operations not only on the abdomen, but also especially after operations undertaken on the ear, nose, throat or head.

While ecchymoses were observed in nearly all cases presenting any one of the conditions mentioned above, the development of the ecchymosis into an erosion occurred only in a small number of cases, and still smaller was the percentage of cases which showed the further development of the erosion into an ulcer. According to Rössle the development of the erosion and its further growth are possible only if there is more than the ordinary irritation of the vagus nerve. It requires a distinct disposition which manifests itself by an increased irritability of the vagus nerve and which evokes prolonged hypersecretion and spasm not only of the muscularis mucosa but also of the larger muscular coat and eventually of the pyloric sphincter The latter causes stagnation of the acid secretion and thereby steadily increases its digestive action on the growing lesion. The irritability of the vagus nerve may be only temporarily increased, for example, by the effect of drugs used for narcosis; this accounts for the frequency of acute ulcers after operations. It is worthy of note that Rössle while examining postoperative material was startled by the frequent finding of acute ulcers and thereon undertook the investigation. His observations led him to the conclusion that the development of the true chronic ulcer is possible only when there is a "chronic" state of increased iritability of the vagus nerve, as, for instance, in the constitutional derangements which Eppinger and Hess[5] lately described as vagotonia.

Similarly we find that other theories have to resort to the effect of continued hypersecretion and muscular spasm in order to explain the growth and the chronicity of the ulcer. We may conclude then that the disorders of secretion and motility are much more essential factors in the pathogenesis of ulcer than the cause of the primary lesion. Very probably the primary lesion may originate in various ways, but it requires prolonged hyperacidity and spasm to produce an ulcer. Since these functional disorders account for the chronicity of the ulcer and prevent its healing, they cannot be considered as mere secondary manifestations of the ulcer, as is the more common view at present.

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[1] Beneke, R.: Verhandl. d. Deutsch. path. Gesellsch., Kiel, 1908.

[2] Rössle, R.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1912, xxv, 766.

[3] Lichtenbelt: Die Ursachen des chron. Magengeschwüres Jena (Gustav Fischer), 1912.

[4] Von Yzeren: Ztschr. f. klin. Med., 1901, xliii, 181.

[5] Eppinger and Hess: Von Noorden's Samml. klin. Abhandl., Nos. 9 and 10.

It is certainly true that, once developed, the ulcer forms a center of irritation which more easily leads to a vicious circle when the constitutional element of vagotonia is pronounced. It seems to me, however, that even under such conditions the functional disorders play by far the more important rôle, because the pronounced periodicity which characterizes the clinical course of most ulcer cases cannot be explained by the mere presence of the ulcer. The periodicity is possible only if there is a further periodic increase of the irritability of the vagus nerve, such as we often observe in spinal diseases, as the result of periods of great mental strain and anxiety, as the effect of toxin action in the course of infectious diseases and metabolic disorders from the use of narcotics, tobacco, alcohol, etc. The fact that, in examining ulcer cases, hyperacidity is often missed, cannot be put forward to disprove its presence and action at other periods during the development of the ulcer.

The *correct understanding of the condition, prevailing* in each individual case, is of paramount importance for the treatment of gastric ulcer. The result of medical methods of treatment depends on the degree to which they combat the functional disorders and their causes, and it is very probable that the 45 per cent. of recurrences after operative treatment could be greatly reduced, if these indications were more strictly observed.

This certainly shows how imperative it is to study functional disorders more thoroughly than heretofore and to investigate, *first of all, their relation to constitutional factors*, instead of depreciating them. The conception of vagotonia is a step in the right direction and although not all the assertions of Eppinger and Hess are corroborated by other authors, nevertheless their view of the constitutional character of the chronically increased vagus irritation is accepted as correct. Vagotonia is particularly frequent in cases of lymphatism. Stoerck[6] lately demonstrated that about 50 per cent. of all ulcer cases show signs of status lymphaticus. Here is further evidence of a constitutional derangement. Stoerck found in these cases aside from other manifestations of lymphatism, numerous small lymph-nodules in the gastric mucous membrane and asserted that the thin covering over these lymph-nodules was easily subject to traumatism by the stomach contents, thus providing the primary lesion. For the further development of such lesions into an ulcer he, too, had to resort to the effect of prolonged hyperacidity and the tendency to muscular spasm, which, as mentioned before, are very frequently associated with lymphatism as manifestations of constitutional vagotonia.

On a former occasion I reported[7] that cases which develop ulcers very often show a lack of mucus in the stomach contents and that the lack of covering by mucus facilitates traumatism of the mucous membrane as well as the digestive action of gastric secretion on the lesion.

The frequency of vagotonia and of lymphatism in ulcer cases emphasizes the importance of constitutional derangements in the pathogenesis of gastric ulcer. We have learned to understand that lymphatism is often associated with various disorders of internal secretion. I mention this here because of the large space which disorders of internal secretions occupy in medicine at present. Further investigations will have to show whether they play any direct rôle in the development of gastric ulcer. So far we have comparatively few positive facts which unmistakably point to the relation of disordered internal secretions and functional disturbances of the stomach.

This short sketch of the problems involved in the pathogenesis of gastric ulcer clearly shows what a different aspect is presented when we cease to consider *only the anatomic lesions, which at present are continually brought into the forefront of the question to the exclusion of the real issues which lie behind them.* Similar considerations obtain for the relation of functional disorders of the stomach and diseases of the intestines, the gall-bladder and the pancreas. They should not be considered exclusively as symptoms, for there are many facts which make it probable that disorders of the gastric function may act to a certain degree as causative factors in these diseases.

Ten years ago I discussed[8] the relation between gall-stones and gastric hyperacidity. While fully admitting *that the gastric disorder is very often the result of the gall-bladder trouble*, I called attention to the fact *that frequently hyperacidity precedes for a long period of time the gall-bladder trouble*, that the constant irritation of the duodenum by the highly acid stomach contents may provoke spasm of the opening of the common duct, resulting in inflammatory processes in the gall-ducts and thus usher in infectious cholangitis and gall-stone attacks. To my great satisfaction I find that so keen an observer as Dr. Arpad Gerster[9] independently arrives at similar conclusions in a paper in which he deals with *the causes of unsuccessful surgery* in disorders of the gall-ducts.

When we come to consider the relation between functional gastric disorders and diseases of the intestines we find that the irritative secretory disturbances, hyperacidity and hypersecretion, are rarely taken into consideration as causative factors in the development of diseases of the intestines; while, on the other hand, it is generally accepted that decrease and lack of gastric secretion frequently provoke intestinal disorders such as diarrhea, catarrhal conditions and faulty fermentation, followed by derangements of nutrition and metabolism, by anemia and, it is claimed in certain cases, even by pernicious anemia. Irritative disorders are valued too exclusively as symptoms at present. Fenwick is usually quoted as the most emphatic exponent of the theory that chronic hypersecretion is merely an expression of an organic lesion of some part of the digestive tract. Yet the same Fenwick[10] says: "The chronic colitis that develops in so many cases of gastric hypersecretion may eventually lead to inflammation of the appendix."

I am convinced that the further study of diseases of the digestive organs, particularly in the earlier stages of their development, will demonstrate that the inborn or acquired disposition to irritative disorders of the stomach is often a very important and causative element.

52 East Fifty-Eighth Street.

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[6] Stoerck, E.: Deutsch. med. Wchnschr., 1913, p. 496.

[7] Kaufmann, J.: Am. Jour. Med. Sc., February, 1908.

[8] Kaufmann, J.: Am. Med., November, 1903, vi.

[9] Gerster, A. G.: Surg., Gynec. and Obst., November, 1912.

[10] Fenwick: Dyspepsia and Its Varieties, W. B. Saunders & Co., 1910, p. 62.

The Importance of Birth and Death Registration to the People as a Whole.—If inventory and stock-taking are essential in business, so in the field of human welfare, the registration of births and deaths lies at the very foundation.—Kingsley.

INTERNAL HEMORRHAGES; CAN WE CONTROL THEM? *

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The chief cause of internal hemorrhage, as it will be considered here, is the rupture of the wall of an artery or vein due to disease. The rarer forms of hemorrhage which occur in blood diseases like leukemia, in infectious fevers like yellow fever and malaria, in obscure conditions like purpura hemorrhagica, etc., will not be considered. The object of this paper is to discuss the best methods of medical treatment of severe internal hemorrhage.

The chief forms of internal hemorrhage commonly encountered in everyday practice are gastrorrhagia, hemoptysis, intestinal hemorrhage and hematuria. The oozing of blood from the distended blood-vessels of a mucous surface or from an ulcerated surface is to be considered only as a means of diagnosis of a possible later cause of severe hemorrhage. Hemorrhage of the type we are to consider is always an accident. The erosion or rupture of the vessel-wall is associated with a morbid anatomy involving usually the organ in which the hemorrhage has its source. Hemoptysis usually is an accident of tuberculosis pulmonum, but may occur in any destructive lesion of the bronchi or lung (gangrene, abscess, ulcer, bronchiectasis, etc.), or in heart or aorta lesions (aneurysms, valvular disease, etc.) Gastrorrhagia may indicate an acute or chronic ulcer of stomach and duodenum, ulcerated carcinoma, varicose veins (esophageal), of cirrhosis of liver (vena gastricae breves), of splenic anemia. Intestinal hemorrhage may be an accident in typhoid fever, duodenal ulcer, ulcerated carcinoma of intestines, ulcer due to tuberculosis, dysentery, mesenteric thrombosis, etc. Hematuria may be an accident due to tuberculosis of kidneys, hypernephroma or other tumor, calculus of kidney, papilloma of bladder, etc. Hemorrhage of slight degree may be important because if long continued it may produce a serious anemia. Grave anemia may prevent or retard recovery. Long-continued hemorrhage may be due to a congenital or acquired faulty blood-coagulation. The fibrin ferment to which coagulation is due is formed by the union of thrombogen and thrombokinase in the presence of calcium. Thrombokinase corresponds with the zymoplastic substance of Schmidt and is believed to be present in the tissue juices. When a vessel-wall is torn or injured thrombokinase is secreted and mixes with the thrombogen of the escaping blood to form fibrin ferment.

Hemorrhage from a ruptured or torn vessel ceases when a thrombus is formed within the vessel. Thrombus formation may be retarded or prevented by faulty coagulation due to the absence of fibrin ferment; by rigid arterial walls due to arteriosclerosis and by a gristle-like ulcer base into which the artery opens. Hemorrhage may recur from the torn vessel if the thrombus is not well fixed and is dislodged by increase of blood-pressure due to any cause. Increase of blood-pressure may also retard or prevent the formation of the thrombus. Mental emotion, physical unrest, stimulating medication and blood transfusions may therefore aggravate and prolong internal hemorrhage.

In the treatment of any internal hemorrhage an endeavor should be made to excite thrombus formation in the wounded vessel. The first principle to apply is rest, both mental and physical. Excitement of the patient, due to the sight of blood must be overcome by moral support; reassurance of recovery, firmness, a calm demeanor, and a quick and methodical procedure on the part of the physician.

Opium is the drug to be used at once, in the form of morphin sulphate, hypodermically. It produces mental calm and physical quiet. The dose should be sufficient to produce both mental and physical calm. With proper consideration of the patient's age, mental state and physical condition, the dose should be repeated to produce and hold the desired result. Absolute physical quiet should be maintained from twenty-four to forty-eight hours in severe hemorrhages in pulmonary tuberculosis, typhoid, ulcer of stomach, etc. Food is not necessary; if taking it requires an effort. Thirst may be controlled by giving small quantities of water, in all forms of internal hemorrhage, except in hemoptysis, and in that condition normal sodium chlorid or calcium chlorid solutions may be injected into the rectum in the amount of 250 to 500 c.c. every four or five hours. An ice-bag or, better still, an ice-coil may be placed over the surface of the organ from which the hemorrhage has its source. It is maintained by good therapeutists that cold so applied penetrates the tissues to a considerable depth. Probably cold as applied has a good moral effect on the patient. It probably does no harm if rationally applied and the patient is not chilled by it.

Most hemorrhages, if controllable, will cease without further treatment. If hemorrhage continues coagulation time may be roughly and yet quickly estimated by aspirating blood from a needle-prick of the ear or finger into a capillary glass tube into which is run a horse hair. The time of coagulation may be noted by drawing the hair partly out of the tube at intervals. If no other means can be used a drop of blood on a clean sheet of white paper may be watched until the approximate time of coagulation is noted. If coagulation time is prolonged over four or five minutes, one may use measures which are known to improve the coagulation time of the blood. The calcium of the blood is one of the factors which promotes coagulation and therefore thrombus formation. In all hemorrhages except gastrorrhagia, it may be given by the mouth in the form of the chlorid, phosphate, lactophosphate or lactate in the dose of 1 gm. every two to four hours. When necessary it may be given in solution per rectum.

If coagulation time is delayed because of the absence of a ferment in the patient's blood, it may be supplied by the intravenous or hypodermatic use of normal human or normal horse-serum, or even of diphtheria antitoxin horse-serum. From 10 to 30 c.c. or even a larger amount may be injected at once and repeated if necessary.

No mention has been made of stypticin, and the astringents to aid in producing thrombus formation. I have no confidence that such drugs are of any use whatever in internal hemorrhage. Drugs which are used for the purpose of constricting the blood-vessels are also useless. Ergot is so used and more recently epinephrin has been employed hypodermically to narrow the caliber of the bleeding artery. All such drugs are likely to do more harm than good. Such drugs increase blood-pressure by stimulating the heart and by causing vasoconstriction. This is quite likely to expel the thrombus and therefore to aggravate the condition.

For the same reason intravenous transfusion or a hypodermoclysis of sodium chlorid or calcium chlorid

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

should not be used to check the hemorrhage. Such transfusions may be used in cases of proximate exsanguination only and then for the purpose of supplying the patient with a circulating medium.

The irrational use of stimulants like strychnin, camphor and ammonia and of heart-tonics like digitalis may be harmful. These drugs should never be used to control the hemorrhage and should be employed only to counteract dangerous collapse, the result of hemorrhage.

In some forms of hemorrhage additional measures may be life-saving. In hemoptysis due to chronic ulcer of the stomach, hemorrhage may not cease so long as the stomach is distended with blood and other contents. Lavage with normal salt solution until the stomach is empty is safe and often effective. When the stomach is empty a large dose of bismuth subnitrate may be used with benefit. Bismuth is much more efficient here than any form of iron or other so-called styptic. In gastrorrhagia the stomach must have absolute rest until the bleeding is controlled. The patient must not be permitted to take anything whatever in the form of food, drink or ice by mouth.

In typhoid, intestinal hemorrhage is especially dangerous because the patient is seriously ill and perforation of the bowel occurs in 20 per cent. of the hemorrhages. Here absolute rest is essential. The patient should not be moved to use a bedpan. The bowels should be permitted to move in a folded sheet. Fortunately the typhoid patient may be given liquids by mouth. Here there may be the more necessary use of stimulants, heart-tonics, etc., to combat the asthenia due to the disease and aggravated by the hemorrhage.

It is my opinion that internal hemorrhages are often irrationally and even harmfully treated. Too much is attempted with drugs and other measures, which not only do not control hemorrhage but probably do aggravate it.

Probably most internal hemorrhages would cease naturally before dangerous exsanguination occurs if the patient were kept quiet. To insure absolute quiet opium is the sheet-anchor in treatment. If thrombus formation is delayed use measures which are known to hasten blood-coagulation in the form of calcium and normal human or normal horse-serum or even antitoxin horse-serum.

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ABSTRACT OF DISCUSSION

Dr. A. S. von Mansfelde, Ashland, Neb.: The pure aluminum metal, as pure as possible, ground into powder, 160 grains in one dose, mixed with glycerol (glycerin) into an emulsion like paint, will stop almost magically hemorrhage from the stomach except from larger vessels. In ulcer of the stomach it can be used again and again without the slightest harm. Ten minutes after its use in ulcer the patient is able to eat and not have pain as a result. It is mysterious and marvelous. I have been waiting anxiously for a case of hemorrhage from typhoid fever because I sincerely believe that nothing can possibly be used that will give the results of metallic aluminum for the control of hemorrhage. This is a theory of mine. I have not had a chance to try it out. In small multiple hemorrhages of the stomach I have found nothing that equals the metallic powdered aluminum. I do not think that it acts as an astringent, but as a covering of a tenacious character or, perhaps, in both ways. Esau, a German, who first used it in experiments on dogs, made artificial ulcers of the stomach and then gave the dogs this mixture, which a German manufacturer puts out in powders of 160 grains. After a little he opened the stomach and then only after repeated washings of the stomach could he find the place where he made the injury. He found it covered as a pipe is covered. Even a rusty pipe is covered with paint. This covering is so tenacious that you cannot get it off the mucous membrane of the stomach and I believe that this tenacious adherence to the mucous membrane produces the results described.

Dr. L. A. Levison, Toledo, Ohio: I think that blood-serum in hemorrhage more nearly approaches a specific than any other remedy. I have used it in eight or ten cases, more especially of the hemorrhagic diathesis type. Most of the cases have been in children, and all have been of the stomach and bowels, although in some cases there has been hemorrhage from the external mucous membranes likewise. In some of these, practically all other remedies had been tried, calcium, astringents, gelatin, in fact, all the remedies that I have been led to believe are of value. I have had more success in stopping these hemorrhages with blood-serum taken from some healthy human being, usually the parent, than with any other remedy. I think that this remedy is not sufficiently used. The blood can be taken from the elbow, allowed to clot and the fresh serum which soon separates injected in 10 c.c. doses every two or three hours until the hemorrhage stops. There is no known dosage. The amount which stops the hemorrhage should be used.

Dr. H. L. Staples, Toledo, Ohio: I have had in the past twenty years a rather extensive experience in typhoid fever, and I have confined myself to three remedies—rest, small hypodermics of morphin, which may be repeated, and absolute abstaining from food.

Dr. Ray L. Wilbur, San Francisco: Will Dr. Billings give us his judgment in regard to the use of gelatin and extract of guinea-pig testicle in the treatment of hemorrhage?

Dr. Frank Billings, Chicago: I did not mention in my paper the use of animal extracts, which are practically the same as serums. We have used them in some clinical work we have done at the Presbyterian Hospital in Chicago, and without any better result, or even as good, because we cannot control the dosage of the remedy quite so well as we can the dosage of serum. I can say less about it, therefore, than I can about the serum. There is no question that in thrombus formation calcium is a necessary ingredient. It can be used alone or in the form of gelatin. When we first used gelatin we supposed that there was some inherent quality in gelatin which influenced thrombus formation, but I think it is the consensus of opinion of those who have studied the question that it is the calcium content of the gelatin which is of value rather than the gelatin, and that on account of the danger in the use of gelatin in causing tetanus it has almost ceased to be used, in my own locality at least. Calcium is used instead. Of course, the human normal serum would be the natural remedy to use. The difficulty arises in getting this remedy promptly at hand. One has to withdraw human serum, centrifuge it and so on and, unless one takes it from a member of the family, there is a possibility that he may get a hemolytic substance and, therefore, cause injury to the patient. So far as my own experience goes the prompt use of the normal horse-serum is about as effective as the human serum and, in large cities at least, that is always at hand. I have never seen any harmful results, because the use of this serum does not extend over a long enough period to produce evil results by sensitizing the patient to that protein, and therefore we do not get the prophylaxis which would be obtained if it were used nine or ten days after the first dose. I have little confidence in the use of astringents or those substances which coat over the ulcerated surface in the stomach or bowel, because as long as the hemorrhage continues the blood is there. It is difficult for me to conceive how a remedy such as the astringent iron, which is so commonly used, can get in contact with an ulcer. Washing out the stomach is one of the best remedies to use in hemorrhage. Afterward one may apply metallic aluminum or bismuth or possibly epinephrin. The main thing I wished to bring out, aside from the causes of hemorrhage and the thrombus formation, is the uselessness of a lot of remedies which have nothing to do with thrombus formation, and furthermore the use of such things as stimulate the circulatory organs and therefore often defeat the very condition which we are trying to bring about. There is no question in my mind that the use of ergot and of epinephrin is harmful in an active hemorrhage. Furthermore, hypodermoclysis used from the *fear that* the hemorrhage is going on and that the patient is going to die is the very thing that will continue the hemorrhage.

TWO CASES OF CIRCULATORY DISTURBANCE OF THE BRAIN *

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AND
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We thought it might be of interest to report to this section two quite rare and extremely interesting cases of circulatory disturbance of the brain.

CASE 1.—The first case is, in all probability, a thrombosis of the posterior-inferior cerebellar artery. It was referred to us by Dr. D. C. Jones.

History.—The patient is a man, aged 47, married, traveling salesman. He uses alcohol in moderation and tobacco in excess. Personal history is negative, except that the patient had gonorrhea at the age of 22; he denies lues. For the past four years he has had bilateral occipital headaches, more marked on the right side and more severe in the recumbent posture. Family history is negative.

Present Trouble.—The present disease began July 12, 1912. While out walking, the patient suddenly developed an attack of dizziness and staggering, so marked that he had to lean against a building to keep from falling. This lasted about ten minutes and was accompanied by diplopia and dull occipital headache. The diplopia disappeared but headache continued for three days, then stopped for one day and patient felt well enough to go fishing. The same evening he felt feverish, but slept well all night. On arising the next morning, he staggered so that he could hardly walk, and had a tendency to fall toward the right side. While washing, he noticed that the cold water felt warm to his right face and left hand. His voice was hoarse; the diplopia had returned, and he had difficulty in swallowing. During the past week he has had a slight tremor of the left arm and chin. Occipital headache was so severe in the recumbent position that patient had to sleep on four or five pillows. This headache disappeared almost entirely in about fifteen minutes after patient stood up. Physical examination was normal.

Neurologic Examination.—Both pupils were equal and reacted to light and accommodation. The fundus of the eyes was normal. Fields of vision were normal; there was no nystagmus. Mild paresis of the right internal rectus muscle was present. Corneal reflex on right side was lost, on left side normal; there was slight drooping of right upper eyelid. On the right side of the face, over the area supplied by the first and second branches of the trigeminal nerve, pain and temperature sense were impaired, while tactile sense was normal. Over the remainder of the face all sensations were normal. Taste sense was normal. There was mild paresis of right facial muscles. Hearing was normal. There was mild paresis of right soft palate and right vocal cord. Patient's voice was hoarse and he swallowed with difficulty. There was no paralysis of the tongue muscles. Romberg was marked, patient being unable to stand alone, his eyes open and legs spread. The examination of the extremities showed the following: muscular strength normal in upper extremities. No ataxia; reflexes normal. In the lower extremities there was no loss of muscular strength. Knee-jerks and Achilles tendon reflexes normal and equal. Babinski and Oppenheim present on right side, absent on left side. No ankle-clonus. Tactile sense normal throughout, while pain and temperature sense were markedly impaired over left arm and left leg and left half of the trunk except the neck region. Deep sensations normal, no astereognosis. All superficial reflexes normal. The Wassermann in the blood was negative. Blood-pressure 138 mm. Hg. Urine normal, except for presence of sugar, 5.4 per cent. Patient voids 68 ounces of urine in twenty-four hours.

Progress of Case.—With rest in bed and increasing doses of potassium iodid he gradually improved. Diplopia and headache disappeared entirely in a few weeks. Sensation improved except over the right face, where it is still impaired. There is also a constant feeling of tightness in the throat. Improvement continued for six months, but on Dec. 7, 1912, patient had a similar mild attack, lasting about ten days and accompanied by occipital headache, hoarseness of speech and difficulty in swallowing. Since then he has made favorable progress and for the past two months has been attending to business regularly. The sugar in the urine still remains and varies between 1 and 8 per cent., and the daily amount of urine excreted is about 120 ounces. The sugar output is not affected by diet, and the patient shows no other symptoms of diabetes. Two years ago he was examined by an insurance company and at that time the urine was normal.

Summary.—Reviewing the case briefly, we have the following: Severe occipital headaches for the past four years, more marked in the recumbent posture; sudden attack of vertigo and diplopia, followed five days later by an attack of staggering, hoarseness, difficulty in swallowing and impaired pain and temperature sense over the right face and left extremities. A negative Wassermann in the blood, a blood-pressure of 138 mm. Hg and urine loaded with sugar. Patient had a mild similar attack six months later. With rest in bed and potassium iodid he made a practical recovery except for sensory involvement of right face, a feeling of tightness in the throat, and persistent glycosuria.

The localization is not difficult; the involvement of the vocal cord, the difficulty in swallowing and the disturbance in speech point to a lesion in the medulla, at about the level of the ambiguus and the glossopharyngeal nuclei. Through this region also passes the spinal portion of the fifth nerve. According to Schlesinger, pathologic-anatomic studies have shown that the arrangement of the fibers from the centers of the fifth nerve are such that those in the distal portion supply mainly the first and second branch, while the proximal portion of the spinal trigeminal root supplies the third branch and controls the sensations of the lower jaw and taste. In our case, the third branch was not affected at all; hence, the lesion could not have extended into this region.

Henschen, in reporting a case similar to ours, remarks that tactile fibers ascend in the posterior columns and are next to the raphe. Therefore, they usually escape in these bulbar lesions. He also states that he has demonstrated in several cases that destruction of the fillet causes loss of tactile as well as of pain and temperature sensations; therefore, the latter fibers enter the fillet more proximally than the medulla oblongata. According to Müller, the spinal tracts for pain and temperature sense decussate soon after their entrance into the posterior horns and ascend by way of the spinotactile and spinothalamic tracts. This accounts for the loss of pain and temperature sense on the side opposite the lesion. The marked ataxia and the tendency to fall to the right point to an involvement of the right cerebello-olivary tract and the restiform body. The dysarthria is due to involvement of the hypoglossus nucleus and must have been slight on account of its transient character. The paresis of the right internal rectus and the involvement of the muscles of the right face point to a lesion of the abducens and facial nuclei. This must have been of a very mild degree, however, for both the diplopia and the facial paralysis entirely disappeared in a few days. The occipital headaches of four years' duration might suggest a brain tumor, but the subsequent improvement and the absence of signs of intracranial pressure readily eliminate this probability. The change in the severity of the headaches, in different position (that is, more marked in the recumbent posture and milder in the erect), points to a circulatory disturbance, probably of arteriosclerotic nature.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

E. Schwarz reported a similar condition in his case. Although our patient had a normal blood-pressure and no signs of arteriosclerosis, one must not forget that isolated arteriosclerosis of the cerebral blood-vessels is quite common. Bonhoeffer, in a recent article, discusses this at length. Both Mann and Marburg have spoken of the occurrence of central pains, especially in the region supplied by the trigeminal and occipital nerves in lesions of the pons or medulla, and believe that they are due to a variation in the filling of the arteriosclerotic blood-vessels. According to Oppenheim, neuralgic pain of several years' duration may be a prodromal symptom of a subsequent thrombosis. These facts might help to explain the headache of four years' duration in our patient. In Bonhoeffer's case the occipital pains ceased soon after thrombosis of the artery had taken place, this being similar to what occurred in our case. According to Duret and Senator, the left vertebral artery is usually the seat of the obstruction, possibly because its course is more in the direction of the subclavian artery and also because it has a greater blood-pressure.

Wallenberg, after carefully studying the course of the injected vertebral blood-vessels, reports the following:

> Each of these arteries gives origin about 2 cm. below their union to the posterior-inferior cerebellar artery and higher to the anterior spinal artery. The latter artery passing downward enters the raphe and supplies the interolivary bundle, the posterior longitudinal bundle, the hypoglossus nucleus and other nuclei below the floor of the fourth ventricle. The pyramids are usually nourished by the vertebral arteries. Branches from the posterior-inferior cerebellar artery or the vertebral artery supply the lateral portion of the medulla oblongata, while the posterior-inferior cerebellar artery also supplies the restiform body.

We are at a loss to account for the persistent and marked glycosuria. It is quite possible that we are dealing with a simple case of diabetes. But the only symptoms pointing to this are the polyuria and glycosuria. Strümpell states that quite occasionally one finds a marked glycosuria following a brain hemorrhage. Müller reports a case of thrombosis of the posterior-inferior cerebellar artery accompanied by transient glycosuria and albuminuria. According to Morris, from the posterior-inferior cerebellar artery, branches are given occasionally to supply the chorioid plexus and the fourth ventricle. Could it be possible that the floor of the fourth ventricle has been irritated sufficiently to produce this glycosuria?

It would have been of interest to study the cerebrospinal fluid at the time of the first examination, but conditions were so serious that it did not seem justifiable to advise a lumbar puncture.

The brain circulation, according to Duret and Huebner, can be divided into two groups, the system of the cortical arteries and that of the central arteries. The cortical system anastomoses freely with the blood-vessels of the pia, and also with itself. After the blood-vessels have entered the cortex anastomosis no longer occurs (Beevor). The central arteries have been considered strictly end-arteries, but according to Hirsch this will bear further investigation. Kolisko has shown that the chorioid arteries anastomose with the lenticulo-optic and lenticulostriate arteries, while Wallenberg, through careful studies of the circulation of the medulla, has pointed out that anastomosis occurs much more extensively in the arteries of this region than was formerly supposed. Frequently the symptoms following disturbed brain circulation are entirely out of proportion to the slight extent of the pathologic lesion found. This probably is due to reestablished circulation of the anastomosing blood-vessels. Thomas reports a case of thrombosis of the posterior-inferior cerebellar artery in which at autopsy no necrosis was found in the medulla, and he explains its absence by the rich collateral circulation.

Case 2.—*The second case that we have to report is a ruptured brain aneurysm. The case was referred to us by Dr. George Earl.*

History.—Patient is a woman, 44 years old. Family history is negative. Patient suffered frequently as a child from severe headaches, which were entirely relieved by wearing glasses. At 32 she had a fall from a swing and was unconscious for a short time. For the past three years she had been in the best of health. After eating her mid-day dinner, Jan. 26, 1913, she went to her room and about four hours later some one heard a commotion and found that the patient had fallen down stairs. She had vomited and was semiconscious. With help she walked upstairs, but soon developed a restless delirious state. This condition lasted until her death, six hours later.

Examination.—The patient was cyanotic; her breathing was stertorous. The reflexes were normal; there seemed to be a slight flaccid paralysis of the left lower extremity. The background of the eyes was normal. There was no involvement of the cranial nerves. The physical examination revealed nothing definite; the blood-pressure was 90 mm. Hg. and the urine was normal.

We suspected a pachymeningitis hemorrhagica or an acute menigitis, and advised a lumbar puncture. This was done and apparently pure blood under pressure escaped from the needle. During the process of the lumbar puncture, the patient suddenly died.

The centrifuged spinal fluid gave a heavy reddish precipitate, leaving the supernatant fluid a yellowish color. The examination of the precipitate showed many normal red blood-cells, a few polymorphonuclear leukocytes and a few lymphocytes. No bacteria were found. This aided us in making a diagnosis of a recent hemorrhage into the subarachnoid space.

Post-Mortem.—This was performed seventy-two hours later. There was nothing particular to note in the organs of the thorax and abdomen except an hour-glass stomach. The skull was of normal thickness. The dura was nowhere adherent. There was no indication of a fracture of the skull. When the dura was opened the brain was found bathed in blood. Blood-clots were seen, especially at the base of the brain. The blood was readily removed by washing and a small ruptured aneurysm, about the size of a hazelnut, was found near the bifurcation of the left posterior cerebral and the posterior communicating arteries. It is of interest to note that there were no previous symptoms indicative of an intracranial lesion.

According to Krey, rupture of a brain aneurysm occasionally occurs without any prodromal symptoms, but usually headache of a paroxysmal nature and pain in the neck and occipital region are present for some time previously. It is quite common to have involvement of some of the cranial nerves, especially the oculomotor and the optic. Krey bases his observations on 108 cases from the literature and his own material. Blowing murmurs on the skull, synchronous with the pulse and disappearing by compression of the carotid arteries, are very characteristic. But a similar blowing murmur may occur in angiosarcomas, in tumors of the corpora quadrigemina pressing on the vena magna galeni, in internal hydrocephalus, and occasionally in normal healthy children. Sometimes brain aneurysms are accidentally found at post-mortem. During life they frequently produce no symptoms up to the time of rupture and then death usually results. According to Lebert and Hey this occurs in over 50 per cent. of all cases. They usually occur at the base near the bifurcation of the larger cerebral blood-vessels; the sylvian, the basilar and the vertebral arteries are most frequently involved. The aneurysm is usually sacculated, but the spindle-shaped variety also occurs. The size varies from that of a pea to a hen's egg. The arteries on the left side are more frequently involved than those on the right. Although brain aneurysms are quite rare, they occur more frequently than in any other arteries of the body. They may occur single or multiple. Nothnagel reports a case of luetic endarteritis in which three brain aneurysms were found, two of which had ruptured at the same time. Clinically it is often quite difficult to differentiate this condition from a pachymeningitis or an acute meningitis. The examination of the cerebrospinal fluid is a valuable diagnostic aid, for in almost no other condition can one find the amount and abundance of blood in the spinal fluid.

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ABSTRACT OF DISCUSSION

DR. SANGER BROWN, Chicago: With reference to the first case reported, I should like to ask about the sense of taste in the anterior two-thirds of the tongue on the side of the facial anesthesia caused by involvement of the two upper branches of the fifth nerve. The diagnosis will, I think, have to be, as I presume is intended, a provisional one, that is, as to the actual cause giving rise to the symptoms. In view of the history I should not be surprised if, after all, we had to deal here with a case of brain tumor and cerebral anemia. The course of the symptoms would suggest the possibility of such a condition, and even though the diplopia perhaps and especially the vertigo and the very severe attack lasted only a few days, it is very likely that those symptoms were due to alteration in the blood-supply caused probably by the presence of a cerebral tumor. It seems most reasonable to me to assume that it is a tumor and that this is the cause of the persistence of the sensory disturbance in the region of the two upper branches of the fifth nerve. I think it is generally conceded now that the sense of taste in the anterior two-thirds of the tongue passes to the brain through Meckel's ganglion, which, of course, is connected with the second branch; therefore, one would hardly expect those symptoms. It would be inconceivable for me to think of a circulatory lesion, or any lesion except a small neoplasm, that would produce the persistence of so definite a focal symptom; whereas by assuming that there is a small neoplasm it would not be a long shot to suppose that its presence would cause just such a circulatory outbreak as seems certainly to have occurred in this case.

DR. CHARLES R. BALL, St. Paul, Minn.: I am somewhat surprised at the diagnosis of arteriosclerosis. It seems to me that the description gives an excellent picture of the symptoms of a vascular syphilitic endarteritis. The dizziness and occipital headache which preceded for some time the outbreak of the other symptoms; the glycosuria and polyuria, which are, as is now known, many times the accompaniments of vascular syphilitic endarteritis, particularly when the lesion is in the region of the inner peduncular space; the transient character of the paralysis and the great tendency to relapse, these relapses occurring over a period of a few months; the improvement, and the fact that by the multiple character of the lesion the mentality is so little impaired, would seem to me to make the diagnosis of arteriosclerosis very unusual. The really important observation in deciding the question definitely would have been an examination of the spinal fluid, which in all probability would have settled the diagnosis.

DR. H. E. CONLEY, Cannon Falls, Minn.: I followed Dr. Hammes carefully, wondering what he was going to do with the glycosuria, what relation this had to the trouble, whether a causative effect or simply a coincidence. It reminded me that some time ago I had a case in which some of these symptoms appeared, especially the recurring dizziness and the inclination to fall, with some headache but not so marked. It was some time before the diabetic condition was discovered, but as soon as it was, without other treatment than diet the dizziness entirely disappeared and the other symptoms were very much improved just by diet alone.

It would be interesting to have this question answered, if possible, in detail: What relation did the glycosuria bear to this trouble?

DR. ROSS MOORE, Los Angeles: I should like to ask Dr. Hammes to tell us whether or not there was any respiratory symptomatology at the beginning of the attacks in this first case, which would be at all like that described by Dr. Kramer in his paper.

DR. C. EUGENE RIGGS: Four of these cases have been reported in the United States, two by Spiller in an article he presented on this subject before the American Neurological Society two years ago. The clinical syndrome of those two cases was exactly like that in the case presented this afternoon, and these two cases were followed by necropsy which proved conclusively that this was the type of trouble that we have to deal with. Of course, I am aware of the fact that only a necropsy would absolutely prove this contention. We were open to criticism with reference to not examining the spinal fluid. But sometimes, I think, the patient ought to be considered, and whenever there is an intracranial pressure or an intracranial neoplasm it is our practice never to make lumbar puncture.

DR. E. M. HAMMES: Answering Dr. Brown's question, the case was normal for the higher tongue, there being no response to taste. The possibility of brain tumor we considered very seriously, and excluded it on the history of four years' duration, on the absence of intracranial pressure, and on the fact that if the lesion, which undoubtedly lies in the cerebellar region or floor, were in the brain, the pressure would be great and we should get a choked disk in that time. Another point, which might exclude tumor is that since December the patient has not had any headache whatsoever.

Dr. Ball spoke of the multiple character of the lesion. It struck me that this lesion was interlocular as much as any lesion could be. The location must be such that it impinges on the glossopharyngeal nucleus. The pain and temperature sense caused by involvement of the proximal portion of the fifth nerve, and the transient paralysis of the sixth and seventh nerves is, I think, readily explained by the transitory circulatory disturbance and the close relation of the other nuclei. One reason why we did not perform lumbar puncture was the first result of diagnosis. We felt that the man had cerebral tumor with subsequent hemorrhage, and we thought that if we performed lumbar puncture at that time we might stir up trouble.

In regard to Dr. Moore's question, there was no respiratory disturbance when I saw the patient about twelve hours after the onset of the attack. The patient has given us the promise of a post-mortem when the time comes, so I hope that we shall be able to report more fully on the case in years to come.

SOME ASPECTS OF HYDROTHERAPY IN THE UNITED STATES *

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In this paper it is intended briefly to refer to some of the features of administration connected with the application of the waters of the hot springs of Arkansas to the relief and cure of disease, and to plans for extending the benefits to be derived from their use through further scientific research to determine more accurately their physiologic and therapeutic effects.

The Indians had unlimited faith in these waters and believed the "Great Spirit" ever present in them. There is a legend that the various tribes fought for their control until finally a truce was declared, a neutral zone established and the sick accorded equal privileges.

Belief in the efficacy of the waters became so general that in 1832, Congress passed an act establishing a federal reservation about the springs for the purpose of conserving them for the benefit of the people of the entire country. It would appear also to have been the intention of Congress to provide for the growth of a municipality under the jurisdiction of the federal government, for the act decreed that the reservation should consist of 4 square miles with the springs as nearly as practicable in the center. For many years thereafter the reservation received little attention. Sick wives or husbands were brought to the springs for treatment long before the days of the railways, making the trip in a prairie schooner and accompanied by the entire family. Huts and houses were built, and thus there grew up a little community of squatters on the federal reservation. As the local commercial interests developed there arose various feuds and differences with reference to property rights and water privileges, until finally in 1877 Congress appointed a commission to adjust conflicting claims. The final outcome of the work of the commission authorized the squatters to purchase the land on which they had built their homes, streets were laid out and ceded to the town, and the federal government relinquished jurisdiction over a large part of the original reservation, which was thus reduced in size to 911 acres with the boundary line between the federal territory and the state moved close to the springs. From that day to this jurisdiction has been divided between the federal government and the state.

By the act of 1891 the secretary of the interior was authorized and directed to make regulations governing the use of the waters from the springs. Under this general authority rules were formulated regulating the operations of the bath-houses and granting or denying to physicians the privilege of prescribing the baths.

Much has been done by the government in developing the reservation into a most attractive park with many miles of well-kept drives and walks affording features of recreation and attractions of outdoor life that may justly be classed as adjuvants to treatment. The relation of the government to the resort is such that there may fairly be said to be an obligation for appropriations available for the further development of these features and for such public utilities and services as are necessary in maintaining the best sanitary conditions.

A prominent physician has recently been elected mayor on the platform of protecting and furthering the interests of patients and of visitors, and a new board of health has been appointed composed entirely of physicians.

The practice of fee-splitting has been vigorously fought by the local medical society and by the government officials. So much of this evil as remains is neither more nor less objectionable at Hot Springs than in other cities except for the fact that the government ownership of the springs and the granting of authority to physicians to prescribe the waters is commonly accepted as a guarantee of ethical practice.

Gambling in all its forms has been eliminated from the resort and it is now fully realized that the most assured financial success of the community rests in its complete and final extinction.

Several years ago inspection reports were made to the Secretary of the Interior by General O'Riley, late Surgeon-General U. S. Army, Lieutenant-Colonel Carter, Medical Department, U. S. Army, Dr. White, Superintendent of St. Elizabeth's Hospital, Washington, D. C., and by the chief clerk of the Department of the Interior for the purpose of determining what steps were practicable for affording improved facilities for the treatment of patients.

The following is an extract from the report of Dr. White:

> The whole problem of the application of the waters of the Hot Springs to diseased humanity is a therapeutic problem and hence absolutely a question within the domain of medicine, and I cannot be too emphatic in my recommendation that the entire plant should be under medical supervision and subject to medical inspection.

Acting on the recommendations contained in these reports the office of medical director was established in 1910, with the following duties assigned by the department:

1. Full supervision of sanitation, hygiene and hydrotherapy—in short, all that pertains to the bathing of patients in the leased bath-houses both on and off the reservation.

2. Full charge of the government bath-house and the employees therein.

3. Maintenance of a clinic for the education of bath-house operators and their attendants.

4. Determination of the fitness of all attendants physically and otherwise, for employment in bath-houses, both those operated by lessees and the government bath-house.

On assuming the duties of the office it was found that there were certain conditions, customs and practices in the bath-houses that were unsatisfactory. In general they were such as would naturally be expected where the baths and other forms of treatment were administered without medical supervision.

In years past hospital patients were nursed by those without special training and the sick of the Army and Navy cared for by men detailed from the line. Better service was demanded. It was provided in civil hospitals by training nurses, in the Army and Navy by the establishment of the Hospital Corps.

To improve the service rendered in the bath-houses the same general policy was adopted. Attendants were instructed in their duties and those found efficient licensed. In the renewal of these licenses from year to year the best have been retained and the inefficient dropped. Through this policy the service has been

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Dr. Harry M. Hallock died suddenly, May 19, 1913. The paper was read by Dr. Ray L. Wilbur, San Francisco.

brought to a much higher grade of efficiency. Head attendants have been appointed in each department and the baths and other forms of treatment are carefully and accurately administered. There are twenty-three bath-houses employing between 200 and 300 attendants carrying out the bathing directions of nearly 150 physicians. Constant supervision is, of course, necessary to maintain the best service.

To improve sanitary conditions in the old bath-houses, lessees were required to submit plans for remodeling or rebuilding before their leases were renewed. Through this policy new houses have been built and are now in operation. They are fire-proof in construction, finished in marble and tile, provided with sanitary plumbing and blast ventilation, equipped with modern forms of hydrotherapeutic apparatus and they provide every facility for the use of the water as a remedial agent.

Thus it will be noted that marked progress has been made in the last few years in abolishing or reducing to a minimum objectionable conditions, customs and practices of the past, and in providing greatly improved sanitary conditions and facilities for treatment in the bath-houses, and more efficient service by the bath attendants. Under the improved conditions, the popularity of the resort has steadily increased until now the annual patronage is about 100,000.

Physicians who have prescribed the waters for years hold slightly different views as to the physiologic effects produced. Among those noted by different observers are an increase in the temperature of the body of from one to several degrees above that of the water, an increase in the rapidity of the pulse, a decrease of tension in the arteries, distention of the veins, and increased metabolism, both eliminative and constructive. Constructive metabolism is noted in chronic malaria, in which after a few baths the increase of hemoglobin is marked. The benefits desired from increased elimination are manifested in rheumatism, in auto-intoxication, in chronic alcoholism and in syphilis, making it possible in the latter disease to administer unusually large doses of mercury and potassium iodid.

The therapeutic effects are commonly attributed to the increased metabolism, and this in turn to the radioactivity of the waters, which has been shown to be of a high degree by the analysis of Boltwood of Yale University. Later analysis by Schlundt of the University of Missouri indicates that the tufa deposits about the springs are also quite radio-active.

The physiologic and therapeutic effects are not due to the high temperature of the water as it issues from the springs, for it is always cooled for bathing and the baths are seldom prescribed above 98 F., nor is anything shown by chemical analysis which satisfactorily accounts for the beneficent results obtained.

Benefit may be expected from the use of the waters in gout or rheumatism after the inflammatory stage; in neuralgia dependent on gout, rheumatism, malaria, or metallic poisoning; in the early stages of chronic Bright's disease; in catarrhal conditions of the gall-bladder and functional disorders of the liver; in chronic malaria; in syphilis; in chronic skin diseases, especially the squamous varieties; in chronic alcoholism and drug addictions; in toxemias due to defective elimination, and cardiovascular disease with increased tension in the arteries. The general tonic and recuperative effects are marked in conditions of debility and neurasthenia due to the strain and fatigue incident to social and business cares and responsibilities. The baths are positively contra-indicated in tuberculosis of the respiratory tract and in all forms of cancer.

In recent years the therapeutic value of mineral springs has with increasing insistency been brought to public notice, and the failure to more scientifically utilize these natural resources of our country has been deplored by many. The recent discovery of radium and its remedial properties in certain diseases, together with the later observation that the waters of certain mineral springs which for years have enjoyed the reputation of affording relief or effecting cures after other measures of treatment have failed could not be satisfactorily accounted for by the chemical constituents of the waters, has attracted much attention with the result that some of the foremost laboratory workers are now engaged in studying through modern methods of research the action of radio-active waters on the living organism.

The Section on Pharmacology and Therapeutics of the American Medical Association at the Session of 1911 passed the following resolution:

> Owing to the importance attributed to radio-active mineral waters in the treatment of gouty and other affections by competent European observers and the special interest excited by the symposium on the subject at the Thirty-Second Balneologic Congress recently held in Berlin, the Section on Pharmacology and Therapeutics of the American Medical Association requests the House of Delegates to suggest to the United States government the advisability of investigating the radioactivity of the various mineral waters of the United States and publishing the results for the benefit of the medical profession.

The fact that the hot springs of Arkansas are owned and the use of the waters regulated and controlled by the government renders it particularly appropriate that such research should be instituted with reference to these waters. The desirability and practicability of the work was carefully considered by the officials of the department and by the physicians who are members of the Federal Registration Board. The advice of prominent medical men in different parts of the country and of local practitioners was also sought and, the consensus of opinion being strongly in favor of such research, the following bill was prepared and introduced at the last session of Congress:

> Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the sum of fifty thousand dollars, or so much thereof as may be necessary, be, and the same is hereby appropriated to investigate the physiologic and therapeutic effects of the waters of the hot springs of Arkansas and to report on the application of these waters to the alleviation and cure of diseases, including the employment of all persons necessary in carrying on the work, the purchase of laboratory apparatus, equipment and other supplies, the renting of building and other appurtenances, and all other expenses necessary to effectuate such investigation, to be expended under the supervision of the Secretary of the Interior and to continue available until expended.
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> SEC. 2. That the Secretaries of the Treasury, of the War, of the Navy and of the Agricultural departments, respectively, are hereby directed to cooperate with the Secretary of the Interior in such investigation, by detailing competent officers, and by extending all hospital, laboratory and other facilities necessary and desirable in the carrying on of such investigation.

The report of the Secretary of the Interior on the bill was published and sent to the professors of practice of medicine and of materia medica in the Class A medical colleges, to prominent biologic chemists and to the presidents and secretaries of the state societies with the view of determining whether or not the research contemplated was legitimate and proper from the point of view of clinical medicine and likely to yield results of value to the profession and through them to the sick. A large number of letters from men of recognized standing in the profession were received in reply and with few exceptions the work was heartily endorsed. There was considerable local opposition to the bill by the laity. It was not reported by the committee and consequently did not pass.

It is requested that this representative body of the medical profession will assist the department in determining the advisability of reintroducing the bill at the next session of Congress. If the research contemplated is not likely to yield tangible results or for any reason is inadvisable, the department desires to know that fact. If it is probable that through modern methods of research combined with carefully conducted and controlled clinical observations as to the effect of radioactive waters on the living organism both in health and in disease, further information can be obtained that will be of material value in extending the benefits to be derived from the use of these waters, it is hoped that the Association will endorse the proposed research by appropriate resolutions.

ABSTRACT OF DISCUSSION

Dr. Ray L. Wilbur, San Francisco: I think it important for the government to investigate these waters and give the profession an opinion.

Dr. W. H. Witt, Nashville, Tenn.: Is it intended to limit the investigation to radio-active waters? Does the term "radio-active" apply to all the waters of the Hot Springs? If an investigation is going to be made it should include all the therapeutic waters found at the Hot Springs and, if there is a limitation, that is, if some are radio-active and some are not, I think that it would be well to leave out the word "radio-active" and have the title read simply "The Therapeutic Waters Found at the Hot Springs."

Dr. C. F. Menninger, Topeka, Kan.: We are far behind in the utilization of the radio-active waters of this country in comparison with Continental Europe and because of their unquestioned virtue and value, especially in the cure of all forms of joint-disease, I think that we ought to take advantage of such an offer as that which Dr. Wilbur suggested in his paper.

Mr. M. I. Wilbert, Washington, D. C.: An investigation is going on now at Hot Springs; Dr. Reid Hunt and Dr. E. C. Franklin are in charge. It might be well to wait until their report is published and then, if necessary, introduce a resolution next year and have it acted on by the House of Delegates.

The Value of Human Life.—It is my belief that it is unwise to emphasize the financial side of the public health question in quite the way, or quite so much, as has been done of late. Life and health are cherished by all. It needs no argument to prove that it is good to be well and that it is wise to spend money for health. It is proper to consider cost in relation to results and financial savings, when such can be figured with accuracy, but there is much in the world which cannot be measured in terms of money, though to so measure it is doubtless the tendency of the age. Should we not place our profession on a higher level by resisting this tendency instead of yielding to it? Is it not dangerous to rely on a balance-sheet of life and death when there are so many chances of error in our calculations? Is it not enough to urge expenditures for the preservation of health because the happiness of mankind will be promoted thereby?—Charles V. Chapin, M.D., in *Am. Jour. Pub. Health.*

CLINICAL SIGNIFICANCE OF THE CEREBROSPINAL FLUID IN NERVOUS AND MENTAL DISEASES

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The examination of the cerebrospinal fluid is of great diagnostic aid in differentiating certain types of nervous and mental diseases. Before attempting to discuss the phenomena of the cerebrospinal fluid in diseased conditions it would not be amiss to emphasize a few important facts regarding its anatomy, physiology and chemistry.

The cerebrospinal fluid is found in the arachnoid spaces of the brain and cord. The walls of these spaces are formed by the inner portion of the arachnoid and outer part of the pia. There is a free communication of the fluid of the brain with that of the cord. It is also probable that the fluid of the ventricles comes into contact with subarachnoid spaces. Through lymph-channels and venous ramifications the subarachnoid spaces communicate with subdural spaces, and in a similar manner connection of the venous sinuses of the dura, especially of the longitudinal sinus, is established. The source of secretion of cerebrospinal fluid is said to be in the chorioid plexus. Others maintain, however, that it is a lymph transudate, mainly a specific product of the brain substance. It is most probable that the fluid is a mixture of both secretion and lymph transudate (Plaut, Rehm, and Schottmüller).[1]

The cerebrospinal fluid exercises three important functions: First, it serves to protect the central nervous system. Second, it acts as a reservoir, regulating the inflow and the outflow of the fluid in the various parts of the central nervous system. During dilatation and contraction of the blood-vessels the fluid aids in keeping up the physiologic equilibrium of volume alteration, and similar activity is noticed in pathologic conditions of the brain and spinal cord, such as tumor growths which produce disturbance of special relations. Third, the fluid takes up decomposition products of the metabolic changes of the brain and assists excretion; albuminoid compounds, lipoid substances, etc. are examples.

The cerebrospinal fluid is thin and water-clear and of low specific gravity (1.003 to 1.008). The reaction is decidedly alkaline. Its chemical composition is as follows:

Water—98.74 per cent.
Solids—1.25 per cent.
  Albumin (in form of globulin and albumose)—0.03 to 0.6 per cent.
  Dextrose—0.4 to 1 per cent.
  Potassium salts, phosphate and urea—0.15 to 0.35 per cent.

In the normal fluid one finds from 1 to 5 lymphocytes per cm. and, indeed, in some instances no cells could be demonstrated.

LABORATORY METHODS

The examination of the fluid should be directed along the following lines: first, chemical; second, cytologic; third, serologic, and fourth, bacteriologic.

Chemical Examination.—The tests for detecting albumin in cerebrospinal fluid are as follows:

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[1] Plaut, [illegible]: Leitfaden zu Untersuchung der zerebrospinal [illegible]

1. Nonne's Test: Equal parts of cerebrospinal fluid and hot saturated ammonium sulphate solution are mixed; a trace of opalescence—turbidity—indicates the presence of albumin: this is phase 1, which usually appears three minutes after the fluids are mixed. This phenomenon invariably occurs in pathologic conditions. On the addition of acetic acid to the former solution turbidity is noticed; this is known as phase 2, and may be observed in normal states.

2. Ross-Jones' Test: Two cubic centimeters of ammonium sulphate are slowly applied by contact to 1 c.c. of cerebrospinal fluid. The forming of a ring indicates the presence of albumin.

3. Noguchi's Test: One cubic centimeter of cerebrospinal fluid and 5 c.c. of pure butyric acid are heated; then 1 c.c. of 7 per cent. solution of caustic soda is applied.

4. Kaplan's[2] Method: "Five test-tubes 1 cm. in diameter each receive 0.5, 0.4, 0.3, 0.2, and 0.1 c.c. of spinal fluid to be analyzed. The tubes containing less than 0.5 c.c. of spinal fluid are brought up to that quantity by the addition of distilled water. Each tube is gently boiled, and 2 drops of 5 per cent. butyric acid in normal salt solution are added and the fluid is boiled once more. Immediately after the second boiling each tube receives (underfloated) 5 c.c. of a supersaturated ammonium sulphate solution. The tubes are set aside and the reading taken twenty minutes later. At the end of this time an excess manifests itself in the form of a thick granular cheesy ring."

Brief mention must be made of the "goldsol" test which enables one to detect small traces of albumin. The preparation of the reagent is complicated and the entire procedure of the test is difficult. Four per cent. sodium chlorid is mixed with cerebrospinal fluid and treated with colloidal gold; the normal fluid will retain the red color of the "goldsol." Precipitation of "goldsol," however, no matter in what dilution, has a definite pathologic significance.[3]

The dextrose in cerebrospinal fluid is detected by the Fehling test.

Cytologic Examination.—There are three methods by which the fluid is examined for cellular elements: first, the French method; second, the Fuchs-Rosenthal method; and third, the Alzheimer method.

1. The French Method: This was introduced by Widal and Rivaut in France and by Nissl in Germany, and may be described as follows: Five cubic centimeters of the fluid are centrifuged in a test-tube with a conical base for about twenty or thirty minutes; the fluid is decanted and the sediment removed by a capillary tube, and one drop is placed on each of three different slides: it is dried in the air, and later fixed in alcohol and ether and treated with any of the blood-stains. The specimens are examined under 1/12 oil immersion. In a negative slide one finds here and there an isolated lymphocyte and at times none at all. In a positive slide the lymphocytes are lumped together and may be so numerous as to make it impossible to enumerate them. By this method we get only a rough estimate of the cytologic phenomena, an estimate by no means accurate. One who has had the opportunity to examine several scores of such slides, experiences no difficulty in sizing up the microscopic picture.

The Fuchs-Rosenthal Method: This is far more accurate than the method described above. Its advantages are: 1. A small amount of fluid is required, and this is especially important in tumors of cord and brain in which withdrawal of too much fluid is detrimental to the patient. 2. It can be done at the bedside and less time is consumed. 3. The cellular elements are better stained and rendered more accessible to interpretation. The Fuchs-Rosenthal counting-chamber is a modified blood-counting apparatus (Seiz, Jena, Eimer and Amend, New York). The pipet is filled with methyl-violet solution (methyl-violet 1, glacial acetic acid 2, and water 500), to mark 1, and the fluid to 11; thus we have a solution of 10 parts of cerebrospinal fluid to 1 part of the staining material. Two hundred fifty-six squares are counted and the number of cells are multiplied by 11 and divided by 32: Formula — cells $\times$ 11 $\div$ 32.

Alzheimer's[4] Method: This method is employed for studying various differentiations of the cellular elements; karyokinesis can be observed; the plasma cells can be easily demonstrated and, in general, the morphology can be studied with more precision and accuracy. I may briefly refer to the technic of this method: In a centrifugal tube with a conical base is put from 10 or 15 cm. of 96 per cent. alcohol and then 5 cm. of cerebrospinal fluid are added. The tube is closed with a rubber stopper. It is allowed to be centrifuged for from one-half to three-quarters of an hour. Then there will be noticed at the bottom of the tube a distinct coagulum which is marked in general paralysis, cerebral-syphilis and meningitis, but which in normal subjects has the thickness of ordinary paper. The alcohol is poured off and the coagulum is fixed with alcohol, ether and alcohol and ether. The coagulum becomes thick; it is taken out with a fine needle and embedded in celloidin and sections are made.

The following staining material may be used: Unna's polychromes, methylene blue, Unna's modification of Pappenheimer's stain, or methyl alcohol. Without encountering special difficulties any of the following agents may be substituted for alcohol; sublimate following with triacid stain, Fleming's solution and Altman's stain, Formo-Müller and Zenker's fluid, and Giemsa's stain after Schriddle. For the last two fixing materials paraffin is used. The coagulum is passed through xylol. For alcohol fixation the sections are cut from 10 to 15 microns thick; for other fixations from 3 to 5 microns thick.

The fluid is examined for the Wassermann test in the usual manner and the bacteriologic examination for tubercle bacilli, *Diplococcus intracellularis meningitidis,* etc., is made in cases which indicate such a procedure.

CLINICAL ASPECTS

Indication for Lumbar Puncture.—All forms of meningitis, syphilitic, and metasyphilitic disorders of the central nervous system, tumors of cord, poliomyelitis, and other conditions in which differentiations from luetic or metaluetic conditions are necessary.

Contra-Indications. — Extreme exhaustive states; advanced cardiac affection and arteriosclerosis and cerebral tumors of the posterior fossa. The last withdrawal of fluid is liable to cause occlusion of arachnoid spaces.

Methods of Lumbar Puncture.—Both the sitting and recumbent positions are employed; the former is preferable, however, provided the patient is not too sick.

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[2] Kaplan: The Laboratory Differentiation Between General Paralysis and Cerebrospinal Fluid, Am. Jour. Insan., 1912, lxix. 340.

[3] The reader is referred to Lange's original article, Ueber die Ausflockung von Goldsol durch Cerebrospinalis, Berl. med. Wchnschr., 1912, p. 897.

[4] Alzheimer: Centralbl. f. Nervenh. u. Psychiat., 1907, p. 449.

Sitting Posture.—The patient assumes a sitting position with his legs flexed and relaxed; *the trunk* is bent forward and both arms are allowed to hang loosely. In such a way relaxation of the vertebral column is obtained. In the recumbent position the patient is placed on the left side with the knees bent and the thighs flexed on the abdomen. The body is pushed forward and the chin flexed on the chest. A horizontal line is drawn across the patient's back at the level of the highest margin at the iliac crests. The line passes the vertebral column at the fourth lumbar spine and it is advisable to introduce the needle between the fourth and fifth vertebrae. Not more than 5 or 10 c.c. of fluid should be removed at one sitting. It is needless to say that all the necessary precautions should be taken for this operation.

It is extremely important that immediately after the puncture, the patient should be placed in bed for twenty-four hours in order to avoid untoward effects. Chronic alcoholics and neurasthenics do not bear puncture very well The after-effects in such cases are headache, nausea, vomiting, and pain with some rigidity in the neck. The second puncture should not be attempted under ten days, because the first operation produces a local irritation that causes an artificial lymphocytosis in the cerebrospinal fluid.

The most striking pathologic phenomenon in cerebrospinal fluid is a lymphocytic reaction which is invariably an expression of an inflammatory meningitic process. Indeed, the more intense the process, the greater is the lymphocytosis. An increase of globulin is another important feature which is usually present in cases presenting a lymphocytosis. Fehling's fluid is reduced in all cases except in the epidemic form of meningitis. Cholin is usually demonstrable in pathologic states. It would be well to take up individually the content of the cerebrospinal fluid in various forms of nervous and mental diseases, and the secondary stages of syphilis.

1. *General Paralysis.*—In this disease the pressure of the cerebrospinal fluid is increased. It is transparent, and at times it may be slightly turbid. Lymphocytosis, (usually of the small variety) is present in a large variety of cases (98 to 100 per cent.), ranging from 12 to 300 cells per cubic millimeter. Plasma cells and a few polynuclear cells are often observed. Globulin is in excess Fehling's fluid is reduced. The Wassermann reaction is, as a rule, present in both fluid and blood. One not infrequently encounters, however, undoubted cases of paresis in the last stages, in which the Wassermann test is negative in the blood or fluid or both.

2. *Cerebral Syphilis.*—The pathologic findings in the cerebrospinal fluid in cerebral syphilis vary and depend on the type of affection. In the acute exudative meningitic form the lymphocytosis is marked; in one of my cases it was as high as 618 lymphocytes per centimeter; and again, in other instances, it was as low as 56 cells per centimeter. It bears a definite relation to the intensity of the meningeal process. In gummatous conditions, with some meningeal involvement, the cell-count may average from 40 to 100 per centimeters. In the endarteric form with relatively little meningitis, the lymphocytic reaction may be as low as 3 or 5 cells per cubic millimeter The globulin is usually in excess, especially in the gummatous and meningitic forms. The Wassermann test in the blood is positive and the fluid may give negative results. According to Plaut,[5] in cerebral syphilis the Wassermann test in the blood is positive; but negative in the fluid; however, such is not my experience. In some of my cases the Wassermann test was positive both in the blood and fluid. In two cases, the serum and cerebrospinal fluid revealed no complement deviation and it was only after intravenous injection of neosalvarsan and potassium iodid and mercury that a positive Wassermann reaction in the blood and fluid was demonstrable. Fehling's fluid is reduced in cerebral syphilis, even in acute exudative meningitis.

3. *Tuberculous Meningitis.*—In this condition the lymphocytosis is very high—about 500 cells per centimeter. In one of my cases it was as high as 1,100 per cubic millimeter. The polynuclear element is, relatively, fairly well marked. Fehling's solution is reduced. The Wassermann reaction is usually negative, although in one of my cases the fluid showed a complement deviation. In addition to these findings tubercle bacilli can be demonstrated in the fluid. The pressure is high and the fluid is often turbid.

In other forms of meningitis the cellular element shows a similar increase, as in tuberculous meningitis. On the strength of the cytologic picture alone, however, a differential diagnosis between tuberculous meningitis and other forms of meningitis, including syphilis, cannot be made. The other laboratory tests and the clinical phenomena are important to take into consideration.

4. *Fracture of the Skull.*—Aside from bloody fluid and increased pressure the content of the cerebrospinal fluid shows nothing significant.

5. *Cerebral Hemorrhage.*—In cases in which the hemorrhage is at the base or has broken through the ventricles, the fluid is bloody and the pressure is increased, but the other findings are negative.

6. *Arteriosclerotic Insanity and Senile Psychosis.*—The cerebrospinal fluid content presents nothing pathologic in this condition.

7. *Tabes.*—In a large majority of tabetics a lymphocytosis of varying degree is usually present. There are cases, however, which show no increase of cellular elements. According to Plaut, Rehm, and Schottmüller,[1] a lymphocytosis is demonstrated in 85 to 90 per cent. Globulin is increased in many cases. Fehling's solution is reduced. The Wassermann reaction in the fluid is present in only 60 per cent. of the cases (Nonne) and in 70 per cent. the blood is positive (Plaut).[5]

8. *Poliomyelitis.*—The findings in the cerebrospinal fluid in poliomyelitis are pathologic but not pathognomonic. Peabody, Draper, and Dochez[6] sum up the results of their investigations as follows:

> The spinal fluid from cases of acute poliomyelitis, during the first few weeks after the onset of the symptoms, shows, in the great majority of instances, deviations from the normal.
>
> Fluids taken during the early days of the disease, and especially before the onset of paralysis, tend to show an increased cell-count with a low or normal globulin content. At this early stage the polymorphonuclear cells may amount to 90 per cent. of the total. Most fluids, however, show almost exclusively lymphocytes and large mononuclear cells. After the first two weeks the cell-count usually drops to normal, or nearly normal, and there is frequently an increase in the globulin content. A slight increase in globulin may persist for seven weeks or longer.
>
> Analogous changes may be found in the spinal fluid in abortive cases.
>
> All fluids examined reduced Fehling's solution.
>
> The examination of the cerebrospinal fluid in acute poliomyelitis, while giving no specific diagnostic criterions, so far as

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[5] Plaut: Die Wassermannsche Serodiagnostik in ihrer Anwendung der Psychiatrie, 1909.

[6] Peabody, F. W., Draper, G., and Dochez, N. R., Rockefeller Institute, New York, 1912.

is yet known, is of the utmost value as an aid to diagnosis both in preparalytic and in abortive cases.

9. *Epilepsy.*—No characteristic abnormal constituents in the fluid are in evidence, except that some investigators found an increase of cholin (?) and phosphoric acid.

10. *Tumor Cerebri.*—In tumor of the brain of nonluetic genesis the fluid is free from pathologic findings.

11. *Tumor of the Spinal Cord.*—According to Kaplan and Casamajor,[7] Nonne and others, the cerebrospinal fluid reveals an increase of globulin but without increase of cellular elements.

12. *Compression of the Spinal Column.*—In such a condition globulin content is increased but is not accompanied by a lymphocytosis. Quite often the fluid coagulates soon after its withdrawal. The cause of the excess of globulin is attributed to stasis and occurs only in the fluid which is below the compression. Not infrequently the fluid is found to be yellowish (xanthochromic). This finding is not characteristic of compression, however, but may also occur in tuberculous meningitis.

13, 14 and 15. *Alcoholic, Infective, Exhaustive and Functional Psychoses.*—The cerebrospinal fluid reveals no abnormal features in this condition except that in acute alcoholic intoxication aldehyd may be detected (O. Schumm.) The findings in the cerebrospinal fluid are normal.

16. *Organic Non-Luetic Nervous Diseases.*—In Landry's paralysis, amyotrophic lateral sclerosis, paralysis agitans, etc., the content of the cerebrospinal fluid is free from abnormal constituents.

17. *Syphilis in the Secondary Stages.*—It would be interesting to call attention to the fact that during the secondary stages of syphilis the cerebrospinal fluid may show certain pathologic changes although the nervous system may exhibit no subjective or objective evidences of an organic affection. Recently Dreyfus[8] made careful studies of the Wassermann test and of the cytology and chemistry of the cerebrospinal fluid in secondary syphilis and found that in seventeen out of twenty-two cases, the cerebrospinal fluid revealed either a lymphocytosis or an excess of globulin and in five instances the pressure of cerebrospinal fluid was increased. It is worthy of note that none of his patients showed any symptoms of organic disease, and furthermore they were not treated with antiluetic remedies. According to Ravaut, Zaloziecki and Rehm, lymphocytosis occurs in 50 per cent. of cases in secondary syphilis Plaut asserts that in one-third of his cases a lymphocytosis was present and in another third the cell-count was on the border line. These important findings in secondary syphilis should receive our careful attention, and, indeed, the cerebrospinal fluid should be repeatedly examined in cases of secondary syphilis. In this manner we are placed in a position to determine the state of the central nervous system and to be guided accordingly in our therapy.

It cannot be too highly emphasized that the importance of the examinations of the cerebrospinal fluid lies in the fact that we, invariably, can either determine or exclude a luetic or metaluetic organic brain disorder or a meningitis of tuberculous or other form. It should be borne in mind that the cytologic reaction with excess of globulin content is of profound significance and is of greater value than the Wassermann test. To quote from one of my former papers:[9]

> In order to make a complete laboratory report of neurologic or psychiatric validity, it is essential to examine the blood and fluid for complement deviations, and in addition to this, cytologic and chemical tests of the cerebrospinal fluid should be made. An examination of the blood alone will throw no light on the psychiatric or neurologic diagnosis. It must also be emphasized that in suspicious cases several examinations of the blood and fluid should be made.

A lumbar puncture under proper precautions and performed by a competent physician is absolutely harmless.

EMPIRICISM IN DERMATOLOGIC THERAPEUTICS

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While, for the last decade, we have made wonderful strides in medicine, and while we are expected to treat diseases with scientific exactness, empiricism is as rampant as ever. Let an enterprising pharmaceutical house bring forward a remedy for a certain disease and advertise it in a pseudoscientific way, and the profession will not fail to adopt and use it until another advertised remedy displaces it. It does not matter whether it be a revived old remedy, a new one, or an old one dressed in a new garb; whether it be a chemical or an animal extract, a heterogeneous vaccine, the profession is always ready to welcome the new medicinal recruit and give it a place in its multitudinous armamentarium. We, somehow, do not trust our old medicinal agents. We are, like our Mexican neighbors, always dissatisfied with medicinal leaders and often have our own little revolutions. Wherein lies the fault? It is due, partly, to our blind devotion to our old-time drugs, which should have been relegated to the attic years ago, and, partly, to our fickleness created by overenterprising pharmaceutical houses. It is really astonishing how arrogant and dictatorial some of the representatives of pharmaceutical firms become. As corrupt politicians, they not only influence the individual members of our profession, but also dominate our societies. Essays and discussions on patent chemical or bacteriologic products are forced on societies. Preposterous and magic claims are made by fickle members of our profession, and their claims heralded in legitimate and illegitimate medical and pharmaceutical journals. I need not mention any names.

I am very proud of the fact that the Council on Pharmacy of our American Medical Association is doing splendid work in trying to suppress this pernicious evil. I am very proud of our individual members of the profession who are bold enough by mouth and pen to expose these pseudo-ethical preparations.

Our fickleness is due to our lack of knowledge of plain and physiologic chemistry, chemistry of the tissues and skin, in healthy and diseased state; lack of knowledge of internal and external secretions. How many of us know the real status of the tissues or skin in normal and abnormal condition? How many of us know what changes take place in certain drugs when used externally or internally? For instance, how many of us know that alkali-free chrysarobin ointments or varnishes form on the skin oxichrysarobin, as a result of the normal presence of oleic acid in the skin? The oxidation process which chrysarobin undergoes on the skin has afforded Unna and Golodetz the opportunity to test, with the aid of other reagents, the reaction of the skin.

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[7] Kaplan and Casamajor: The Neuroserologic Findings in Tabes, General Paralysis, Cerebrospinal Fluid, etc., Arch. Int. Med., p. 262

[8] Dreyfus: München. med. Wchnschr., lix, 1912.

[9] Karpas, M. J.: The Clinical Interpretations of the Serologic Content of the Blood and Cerebrospinal Fluid, with Some References to the Cytology and Chemistry of the Latter in Mental Diseases, Am. Jour. of Insan., lxix; The Significance of Wassermann Reaction for Psychiatry, Bellevue Hosp. Bull., January, 1911.

How many of us know what chemical action takes place when several drugs are incorporated in a fatty base, and what such a preparation does when it comes in contact with the secretions of the skin? I do not believe that any of us stop to consider such questions. When we apply Lassar's paste for the protection and what-not, of the skin, we are no more scientific than the old women who advocate the bread-and-milk poultice. One does as well as the other.

Do we positively know what becomes of a certain drug and how it acts when it is taken internally? Do we positively know what organs absorb the drug and how much is eliminated? Let us take, for instance, cacodylate of sodium. Gautier, who suggested this drug in preference to arsenic, demonstrated that sodium cacodylate is easily tolerated, though a small part of arsenic is actually split off from this organic compound and appears in the urine as arsenious acid. He also demonstrated that the liver, intestines and stomach had the power of reducing cacodylate of soda. Consequently, when cacodylates are taken internally, the odor (garlicky) of cacodyl oxid occurs, while this phenomenon is rarely exhibited when the drug is used subcutaneously. Sodium cacodylate distinctly diminishes the oxidation power of the body.

Superficial physiologic study of drugs is only speculative and, hence, unreliable. The exact scientific study of any remedy requires its thorough test on animals in healthy and diseased states before it is used on man.

Are our older drugs perfect? By no means. Chemistry and physiologic chemistry were not so thoroughly understood formerly as they are now. Even now their conclusions are not infallible. The study of drugs was too superficial, too speculative. Many drugs were called specific that never deserved the name of specific. When it comes to drugs we often grow too enthusiastic. Psychologic influence is often mistaken for the therapeutic value of a drug. Hence, the success of a certain drug in the hands of one physician and its failure in the hands of another.

In dermatology, the most complicated branch of medicine, empiricism is just as rampant as in other branches. This is due to external manifestations which we are expected to remove at once. No psychologic influence can be used in our branch as in other branches. No imaginary diseases come our way. We have to face visible facts, often with invisible causes.

Although acne, eczema, psoriasis, lichen planus, erythemas, purpura, lupus erythematosus, pellagra, rosacea, alopecia areata, hypertrichosis, hyperidrosis, seborrhea and pruritus are the diseases we come in contact with most frequently, and their clinical pictures and histologic changes are well known to us, their true character and etiology is still obscure.

Notwithstanding the brilliant work of Gilchrist, Adamson, Engman and others, the true etiology of acne is unknown. Even in regard to lupus vulgaris, there is still a doubt in the mind of many investigators as to whether it is a local skin disease or a symptom of tuberculous diathesis.

No true etiology will ever be established until we have thoroughly investigated the reaction of the skin against outward and inner influences in the normal skin and in the various skin diseases. There are so many processes in metabolism and in chemism of the skin, causing skin lesions, that a dermatologist must be a good internist and well versed in physiologic chemistry. We have paid very little attention to internal and external secretion of large and small glands and, no doubt, there exists a relationship between them and the skin.

Taking into consideration that in the majority of frequent skin diseases, the etiology is unknown, how, then, can we expect rational and scientific therapy? Our present dermatologic therapy is empirical. No wonder, then, that dermatologists have always refrained from referring to therapeutics in presenting and discussing papers. They have used drugs from choice and habit.

Looking over the standard works on skin diseases, one will be appalled by the numerous remedies recommended for skin diseases of unknown etiology. In the twelve standard works on dermatology (two American, two English, three German, two French, one Russian and one Italian) I find recommended: 34 remedies for acne, 49 for eczema, 21 for urticaria, 22 for pruritus, 22 for lupus erythematosus, 24 for erythemas, 26 for alopecias, 32 for psoriasis, 30 for lichen planus, 12 for pellagra and 26 for purpuras.

Arsenic stands at the top. Sulphur comes next. Both of these drugs are used externally, internally and eternally. Both the laity and the profession seem to be very fond of these drugs. These two drugs, like the poor, have always been with us. Arsenic has been a dangerous therapeutic weapon in the hands of the laity as well as the profession. It has been used *ad nauseam*. Calcium sulphid and red sulphid of arsenic, both very unreliable and unstable preparations of sulphur, seem to be favorite remedies for acne. Speaking of calcium sulphid, the late Dr. Hyde was right when he said that "it should be set down side by side with the ludicrous specimens of therapeutic empiricism." A good many other drugs ought to be placed in the same category.

In my article,[1] on "The So-called Important Drugs Used in Dermatology," the reader can obtain some ideas of the little value of even the most important drugs. I may be called a therapeutic nihilist. It is *not* nihilism that compels me to take such a view; it is realism, and no real progress can be made without realism.

The *Journal of Cutaneous Diseases* should be commended for creating a department for therapeutics. In this department we should fight our battle fair and square. "Only facts" should be our motto.

There is no question that a great many skin diseases, of unknown etiology, are of toxic nature. The resistless progress toward accuracy of diagnosis of the autointoxications, gives us assurance that chemical certainty is shortly to place in our hands the power to control that vast chaos of sufferings caused by toxins. We need a few more men like Pasteur, Koch, Ehrlich and Metchnikoff. With the influence of such men, empiricism in medicine is bound to disappear and scientific facts will become our guides.

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[1] Ravitch, M. L.: The So-Called Important Drugs Used in Dermatology, Jour. Cutan. Dis., June, 1913.

The Red Radish in Science.—An alcoholic solution of the skin of a red radish serves as an excellent indicator or test for acids and bases. In the presence of acids the colorless solution turns pink while with bases—alkaline solution—it turns yellow. It is well known that many plant extracts such as litmus and animal products like the cochineal bug possess this property of developing marked colors with acids and bases, but no other indicator is so simply made.—*Scientific American.*

DIURETIC DRUGS IN ACUTE EXPERIMENTAL NEPHRITIS [*]

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The term "diuretic drug" is used in this paper to indicate drugs which are used frequently by physicians for the purpose of causing diuresis. How they act, whether or not they are actually diuretics, and questions of this nature lie beyond the scope of this paper, and are left for discussion by pharmacologists.

Since the abstract of this paper was prepared a portion of the work has been published,[1] and this I shall review briefly.

In that paper we described experiments with theobromin sodium salicylate in rabbits having severe nephritis produced by uranium nitrate. In half of the animals theobromin sodium salicylate was given by stomach-tube, and in half it was given intravenously. In all eighty-two rabbits were used, half of which, not receiving theobromin sodium salicylate, served as controls. In order to have the animals which received theobromin sodium salicylate and the controls under the same conditions of experiment in each series, every alternate animal was a control. The nephritis produced was fatal in all except twelve rabbits, nine of which had received theobromin sodium salicylate. Of those receiving theobromin sodium salicylate by stomach-tube and dying, the average duration of life was 6 days, of controls 6.94 days. Of those receiving theobromin sodium salicylate intravenously, the average duration of life was 4.56 days, of controls 6.23 days. Thus under the conditions of our experiments, theobromin sodium salicylate materially shortened the life of animals with severe acute fatal nephritis.

In another series of experiments in the Laboratory of Theory and Practice of Physic at Harvard shortly to be published by Walker and Dawson in the *Archives of Internal Medicine,* a similar study was made of caffein, theocin, potassium acetate, spartein sulphate and water, in severe fatal uranium nephritis in rabbits under similar conditions as in the theobromin sodium salicylate experiments. A smaller series of animals was used in these experiments, and in them all drugs were given intravenously in doses corresponding to those used therapeutically in man. The average duration of life was as follows: caffein 5 days; theocin 4 4/7 days; potassium acetate 4 4/7 days; spartein sulphate 6 days, with one surviving animal, while control rabbits lived 8 1/5 days. These results are essentially similar to those obtained with theobromin sodium salicylate. With water given intravenously in the same amount as used for a solvent of the preceding drugs in one series of four rabbits, the duration of life was 5 1/6 days, while of controls two died in the same time, and two survived. In another series of four rabbits the duration of life was 3 5/12 days for rabbits receiving water, and of controls 3 5/6 days. It will be seen that in these experiments water produced but little change in the average duration of life. Still, on the whole, it tended to shorten the life of the rabbits. In all of the experiments with diuretic drugs described in the foregoing, the rabbits were on a diet of carrots, oats and water, to all of which they had free access. The amount they ate and drank varied with their appetite, and always appeared to decrease after nephritis developed as the result of doses of uranium nitrate.

In yet another series of experiments I attempted to find out what effect theobromin sodium salicylate would have on the kidney as measured by some of the tests for renal function. In one set of six animals a severe nephritis was produced in rabbits with uranium nitrate. The rabbits were kept in metabolism cages, and water and food intake and urine output were measured. The excretion of phenolsulphonephthalein was measured before and after giving the uranium. There was a prompt decrease in the ability of the kidney to excrete this coloring matter after uranium had been given. This decrease in phenolsulphonephthalein excretion in rabbits having a very severe nephritis appeared to be uninfluenced by theobromin sodium salicylate which was given to three of the six animals.

In another set of five animals, a milder though still quite severe nephritis was produced by uranium. Here the phthalein output was less markedly decreased in the animals receiving theobromin sodium salicylate than in those not receiving the drug. In neither set was there any striking or constant influence on total urine output, thus agreeing with the findings in normal rabbits. In these rabbits in which renal function was measured by the phenolsulphonephthalein excretion, theobromin sodium salicylate was given subcutaneously.

With the cooperation of Professor Folin I have similarly studied the influence of theobromin sodium salicylate on nitrogen retention of the blood, which results were reported at the Association of American Physicians in May, 1913. Here only the very severe nephritis was studied, and theobromin sodium salicylate seemed to have little if any influence on the nitrogen retention.

Obviously too few animals have been studied in relation to the effect of theobromin sodium salicylate on renal function in rabbits with experimental nephritis to justify any generalizations or any deductions directly applicable to our therapeutic problems in man. The results are suggestive, however, indicating the need of careful reexamination of the effects of various diuretics in nephritis, and are reported here in this incomplete form in the hope that they may stimulate a renewed study of the action of diuretics in nephritis. Methods of testing renal function give us better means of examining the effects of drugs on the kidney, both in animals with experimental lesions and in man with natural disease. Their application in each should yield us valuable information to help in the difficult problem of how best to treat nephritis.

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ABSTRACT OF DISCUSSION

Dr. A. D. Hirschfelder, Baltimore: I should like to ask Dr. Christian whether or not he has had any experience with the glomerulonephritis and what his advice would be, if any can be given, regarding glomerulonephritis as one encounters it in a chronic infective endocarditis, in which Baehr and others have found septic emboli of *Streptococcus viridans* lodged in the loops of the capillaries within the glomerulus. Under these circumstances, encountering severe retention, with edema and mild failure of the circulation, should one, in the light of experimental nephritis, at least, resort to any of the diuretic drugs, or particularly the saline diuretics, or would it be a more satisfactory procedure, in the light of present knowledge, to withhold them?

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[*] Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[*] From the Laboratory of the Department of the Theory and Practice of Physic, Harvard Medical School.

1. Christian, Henry A., and O'Hare, James P.: A Study of the Therapeutic Value of a Diuretic (Theobromin Sodium Salicylate or Diuretin) in Acute Experimental Nephritis (Study XVI), Arch. Int. Med., May, 1913, p. 517.

Dr. Henry A. Christian, Boston: Dr. Hirschfelder's question is easily answered because in all of these animals suffering from uranium nephritis there was a very marked glomerular lesion; that is a fact apparently overlooked by Schlayer and others in their work. A severe experimental nephritis produced by uranium nitrate practically always shows very marked glomerular lesions. My associates and I have described five or six distinct types of glomerular lesion which occur in this form of nephritis, so that it can be said that practically every one of these animals with severe nephritis had lesions of both glomeruli and tubules. Under these conditions I should not be quick to recommend active diuretic procedures in the human being with severe acute lesions, probably in the glomerulus. We probably should not know whether these lesions were in the glomerulus or not and I should be willing to try some diuretic procedures if they seemed otherwise indicated, but so far as can be inferred from this work, recognizing our ignorance as to whether there is a glomerular lesion or not in the given human case, I am still rather in doubt as to how to treat it.

THERAPEUTIC POSSIBILITIES OF TRANSFUSION *

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On the very suggestion of the word "transfusion" one's imagination immediately conjures up an individual clinging desperately to a life that has been all but snatched from him as a result of accidental hemorrhage, postoperative hemorrhage or one of those tragic depletions that not infrequently occur in the course of certain well-recognized conditions, such as extra-uterine pregnancy, gastric ulcer, etc. And there is ample justification for this; transfusion is at present an emergency operation—an operation to which one resorts with relative infrequency and only when the patient is in the direst straits. The brilliant results that have been achieved despite the unpromising conditions under which we perform it are proof, if proof be needed, of its helpfulness.

I was recently reviewing my records and was forcibly impressed with the number of transfusions which I had performed, not as emergency operations, but for the relief of various other conditions. I analyzed the findings and from them formulated for myself this question which I now take as the subject of my paper: "Is transfusion purely and simply an emergency operation? May not its chief field of usefulness be rather as a therapeutic agent, and have we not almost entirely overlooked this possibility?"

True, there will always be emergency cases. There will always be a certain number of cases in which fresh blood, immediately and bountifully supplied, will be the only means of saving life. But, are there not a great many so-called medical conditions for whose relief blood, fresh blood, is equally as necessary to life and well-being, though not quite so urgent as in the emergencies? Let me describe the therapeutic potentialities of this procedure.

Let us consider first cases of gastric or duodenal ulcer. Is there a physician who has had a case of this kind under his care in which bleeding has not been a complication? The method of procedure in the presence of the hemorrhage is rest, starvation, ice-bag, morphin, etc., and when the hemorrhage persists, in spite of all treatment, or is so profuse right from its inception as to be alarming, life-endangering, what then is the method of procedure? Starvation, rest, ice-bag, morphin, etc., with a little horse-serum or human serum introduced in order to change the coagulation time of the blood and thus check the hemorrhage. If the bleeding stops, as it does in the vast majority of cases when the blood-pressure becomes so low that the heart is unable to overcome the resistance offered by the vessels, what then is the method of procedure? Is it not that the physician congratulates himself and the family, everybody heaves a sigh of relief and then all sit back, literally with folded hands, patiently to await the gradual, tedious convalescence of the exsanguinated victim, who under our so-called modern conditions must to all intents and purposes work out his own salvation? Furthermore, is it not also a fact that the family is almost invariably told that the enforced rest and starvation diet will be a great boon to the afflicted one in that it will give the ulcer a chance to heal? Thus do we delude others and ourselves. Do these ulcers heal? Do these patients make complete, permanent recoveries? Perhaps a few of them do, but an honest consultation of the records will show that the recoveries are in the sad minority—and the tale told by the record-books can be supplemented from the experiences of the surgeon who *sees so many of them after they have been cured!*

I earnestly believe that in our treatment of such cases we have utterly missed the point. When a person becomes run-down, to use a colloquialism, all our energies are bent toward building him up. No matter what is his ailment, medical or surgical, if the patient is below par, if he is anemic and his hemoglobin is low, attention must be devoted toward raising these most important factors to normal before a complete and lasting cure can be expected. And, correspondingly, with individuals exsanguinated as a result of a gastric or duodenal ulcer, it is unreasonable to expect the ulcer to heal when the body has all it can do to regenerate new blood. Tissues never heal under such conditions. They require nutrition in the form of blood—fresh blood, *and quantities of it*—in order that they may recover, and I am of the opinion that a proper realization and application of this principle by means of transfusion, *in selected cases of course*, will result in a much higher percentage of permanent cures than has ever before been *obtained*. *Use transfusion in these cases, not in the active stage of the bleeding*, unless it is alarming, but in the quiescent stage a few days after the bleeding has ceased. It is unwise to give too much blood during active bleeding; in the presence of hemorrhage it is hazardous to raise the blood-pressure very much; one should simply give sufficient blood to decrease the coagulation time and tide the patient over this dangerous period. *In the quiescent stage the vessels can be and should be filled to the brim.*

Freshly transfused blood is of service not alone in cases of ulcer of the intestinal canal. Certain forms of obscure anemia, formerly considered *intractable*, *seem*, in the light of further experience, to respond with gratifying improvement to transfusion. A little over a year ago I transfused a boy about 7 years old who had suffered for several years from so-called splenic anemia. He had had repeated hemorrhages from the stomach and he vomited *practically* all the blood I gave him about eighteen hours after the transfusion. His hemoglobin then was so low that it failed to register and he was in a desperate condition, so desperate that it was decided as a last resort to transfuse him again and remove his enlarged spleen at the same time. This was done twenty-four hours after the first transfusion, the splenectomy being rapidly performed by Dr. John M. T. Finney. After a very stormy convalescence the boy apparently made a complete recovery. He died five months later from another gastric hemorrhage, probably the result of an old esophageal varix. (After leaving the hospital his mother indulged his fancies and appetite too freely at Atlantic City.) It will be remembered that he had been ill three or four years, during which time these varices had developed.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Only recently I have transfused in a case of anemia of long standing somewhat similar to the above, and the patient is doing so well that her spleen, which it had been planned to remove under a second transfusion after the first one should have improved her condition, has not been disturbed.

Encouraging results are being reported in pernicious anemia, though in this condition repeated transfusion seems necessary. After each operation blood is gradually lost, but repeated doses are apparently beneficial. Not long ago a man was admitted to St. Agnes Hospital, Dr. J. C. Bloodgood's clinic, in desperate straits from pernicious anemia. All medical means had been exhausted, and as a last resort he was transfused. He improved, but shortly afterward lost ground and had to be transfused again. He was given, in all, four doses of blood from three different donors and he lived nearly two years, once getting up to a count of 2½ million red blood-corpuscles and being able to get about a bit. He finally developed a high fever which was fatal. I know of no complete and permanent cure, but it must be remembered that transfusion is never done in these cases until all possible medical means have been exhausted, by which time the patient is almost *in extremis*.[1] Perhaps an earlier use might give better results. At any rate, I believe that the evidence against transfusion in these conditions of obscure anemia is based on too few cases and that until the number is great enough to warrant accurate deductions, transfusion, and repeated transfusion, should be practiced in every case in which it would seem to offer the slightest chance of success. By this I mean that the patient should be brought up for operation before he is moribund, before he is in such shape that nothing short of a miracle can save him.[2]

Certain toxemias, obscure in origin, only too often deadly as regards their outcome, may be helped by new blood. A case in point is one that I attended with Drs. Slemons and Burnam—a case of toxemia of pregnancy. The patient was a young woman who had been operated on some months previously for stone in both kidneys. About six weeks before we saw her she had begun to vomit constantly, her urine decreased in amount and she became quite ill, the condition being diagnosed as nephritis. Her course was progressively downward, and finally Dr. Burnam went over to Washington, her home, diagnosed a three months' pregnancy and immediately brought her over to Baltimore, where Dr. Slemons emptied the uterus. By this time the patient was in very bad condition. She had lost about 60 pounds in weight, on account of her vomiting had taken no nourishment for days, and had secreted but 15 c.c. of urine during the preceding twenty-four hours. She failed to respond after her uterus was emptied and about twelve hours later, in an almost hopeless attempt to save her life, she was transfused from another pregnant woman, the theory being that certain antibodies might be present in the blood of one normally pregnant woman which might overcome the toxins circulating in the blood of another woman suffering from the toxemia of pregnancy. We cannot affirm this theory as true, but the fact remains that our patient rallied. Six hours after the transfusion she secreted 75 c.c. of urine and her pulse had dropped from 160 and up to around 120. It was, however, alarmingly irregular. Her mental condition was remarkably clear. She held on in this condition and in the next twenty-four hours secreted 1,100 c.c. of almost perfectly normal urine and seemed on the road to recovery when suddenly about thirty-six hours after the transfusion she died —probably from a myocarditis resulting from the prolonged illness and the overwhelming poison that was apparently eradicated too late to be of service. The ammonia content of this patient's urine before transfusion was 22 per cent. The 1,100 c.c. of urine mentioned above contained 7.8 per cent., the normal being between 5 and 6 per cent. Her urine, therefore, was practically normal in all respects; there was no albumin. Had she not come for transfusion so late, I am sure we could have scored a brilliant victory.

A case very similar to this, but more fortunate in its outcome, has been reported by Dr. H. M. Keator[3] of New York. His patient, also suffering from toxemia of pregnancy, developed in addition a severe purpura. All treatment was unavailing. The uterus was emptied, but the patient failed to rally. She made a prompt and complete recovery after transfusion from her husband.

I think there can be little question but that transfusion should have a further trial in this distressing and fatal condition, and I would suggest that it should also be tried in those cases of eclampsia that fail to respond to treatment.

Fresh blood has been used with considerable success in pellagra; Cole of Alabama having reported twenty or more cases in which he had done transfusion with 60 to 80 per cent. of cures—a vast improvement over statistics reported by other methods of treatment. I have transfused two patients myself. The first was a woman (St. Agnes Hospital) in the terminal stage of the disease, the mental features being most pronounced. The course of the disease was uninfluenced and she died a few days after the operation. The second, also a woman, was in a stage somewhat earlier than the first, although mental symptoms were becoming apparent. All medical treatment had failed and the patient was going steadily down hill. After transfusion from her husband she made a gradual but apparently complete recovery. She died five months later of acute alcoholism,[4] and at necropsy absolutely no signs of pellagra were found. It is my conviction that transfusion in this condition simply raises the resistance of the patient and enables him successfully to throw off an infection or toxin that would otherwise overwhelm him. It hardly seems likely that there is anything specific.

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[1] Only ten days ago I transfused a young man who, suffering from a most malignant type of pernicious anemia had a hemoglobin of only 13 per cent. and a red count of a little over 1,000,000 cells. He was benefited for three or four days but succumbed within ten days, as had been prognosticated. The only reason I consented to transfuse this case was that I knew it could do him no harm and because he and his family wished to take the infinitesimal chance of aid that might result. But these cases are *too late*. The patient must come up for transfusion while there is still some fight left in him.

[2] So far as I am aware no case of pernicious anemia has been transfused when the hemoglobin was 50 per cent. or over. It might well be that these cases will retain and utilize to advantage, new, whole blood early in the course of the disease, whereas such is not the case later on.

[3] Keator: Am. Jour. Obst., 1912, lxv, 1005.

[4] This patient had a decided alcoholic history before she developed pellagra, being especially addicted to gin. After her recovery she began to drink harder than ever with the inevitable result above noted.

The success of the foregoing case of pellagra emboldened me to try transfusion in two other cases of skin disease, namely, pemphigus foliaceus and psoriasis. Both were chronic intractable cases and both patients were quite anxious to have the attempt made. Temporary relief followed in each instance; but there was no permanent benefit. Further work in these conditions, especially pemphigus, is in progress and the results will be noted later on. The field is as yet untouched, and it seems not unlikely that whole blood may be of considerable service in certain of these maladies.

Besides the cases in which the patient is suffering from a definite disease, it seems to me that there are many conditions in which and many individuals to whom a supply of good, red blood would seem to be the one thing needed; the boost that would start them off on the up-grade toward health. Cases of chronic infection and consequent debility, cases of lowered resistance resulting from no one definite cause and even certain selected cases of tuberculosis. Think how many individuals there are who are constantly complaining—anemic, sallow, hollow-chested, weak people who never have an appetite and are incapable of work, or who work only under great stress. Iron, arsenic, fresh air, good food—these and a host of other means help a certain number of such patients, but a not inconsiderable number remain to struggle along and eke out a weary, worthless existence. Does it not seem possible that the needed stimulus might come in the form of a bountiful supply of healthy, fresh blood? May it not well be that a number of the undernourished, anemic children or prematurely born babies might be amenable to the same form of treatment?

I might discuss a number of other conditions in which transfusion might be employed—such as hemorrhage in the new-born, bleeding in typhoid, shock, illuminating-gas poisoning, bad surgical risks, etc.—but their mention would serve only to further illuminate a topic which I intended to present not so much for its instructive as for its suggestive value. In conclusion let me emphasize the fact that transfusion, in this day, is by no means the formidable operation it is commonly considered. Judicially used it is practically without risk either to donor or recipient. The dangers of hemolysis and anaphylaxis are practically nil, and a careful examination of the donor—especially is it advisable to have a Wassermann—will rule out the chance of transmitting disease. I have never known a donor to receive an infection from a recipient. This is, of course, theoretically possible, but is not likely to occur if proper precautions are used to prevent it. In a recent transfusion for hemorrhage in typhoid there was no infection.

Under these circumstances let me ask practitioners to consider the suggestions I have made. Perhaps they will conclude with me that an important therapeutic agent has been almost totally, but not irrevocally overlooked.

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ABSTRACT OF DISCUSSION

Dr. Torald Sollmann, Cleveland: I wish to confine myself to the subject of intravenous infusion, in conditions of low blood-pressure. It is important to realize that when you relieve organic imperfections by introducing some fluid you do not automatically or necessarily relieve the physiologic imperfections that may be present. The former can be of only temporary benefit, unless at the same time directly or indirectly you meet the physiologic imperfection, and that the simple introduction of fluid does not always do automatically. If this disturbance has not gone too far, you may still have restoration by preventing the mechanical condition, but in experimental work that only remains for a relatively short time, and that is in agreement with clinical experience.

As soon as the physiologic conditions of the heart and blood-vessels have suffered for a long time, which is relatively short, depending on how much they have suffered, five months or longer, then to restore the mechanical conditions will not bring permanent relief. The relief of mechanical conditions will give really good results only under favorable conditions and not otherwise. The mechanical relief, however, is the subject we are considering directly. That means the restoration of fluid in active circulation. This is done very easily by introducing more fluid into the vessels. As has been pointed out, the normal saline solutions fill the vessels, not at once, but quite rapidly. I can imagine that the time during which even normal saline remains in the vessels is quite long enough to reestablish favorable conditions and to tide the patient or animal over the dangerous period, when it can resume its own functions. The fact that saline solutions leave the vessels rapidly is by no means an unqualified objection to the use of saline solutions. It may be a very favorable feature.

You must remember that when you introduce a fluid which does not leave the vessels immediately, if you succeed in restoring the normal, you establish an abnormal stage by introducing something which the normal cannot at once remove. That may or may not be objectionable. The condition is not a simple one. There is more than one thing to accomplish. Simply getting a solution into the blood-vessels does not solve all the problem. Clinical experience may show that it is desirable to have a fluid which will remain in the blood-vessels only a short time, and then leave the animal to its own devices. We have various means of measuring how quickly a solution leaves the blood-vessels, and where it leaves. As a matter of fact, saline solution does disappear quickly, but not into the urine only; in fact, only a very small part. The major part disappears into the body itself, into cells, lymph-channels and so forth. I should say, therefore, that taking the urine as a guide for the disappearance of fluid from the blood-vessels is hardly safe. There are better methods for showing that. They also show that colloidal salts are retained for a long time. It is not necessary to discuss here why they are so retained, but that brings with it an advantage in certain cases, and some dangers in other cases. Colloids by the very fact that they are not eliminated will persist in the body. Are they absolutely harmless there? That is the question I wish to put to you. It is well-known that foreign colloids in the circulation are many of them disturbing substances to the circulation. We also know that the animal's own plasm is not disturbing. Therefore, it is important that a foreign colloid may be found which also is not disturbing. Whether that has been found in gelatin or not is a question which must be investigated. I would proceed rather cautiously.

Dr. Harry Sloan, Cleveland: I want to commend Dr. Bernheim's advocating transfusion in cases in which there has been a sudden depletion of blood from the blood-vessels in that it gradually reduces convalescence and returns the patient to his normal condition in a shorter time. The principle at fault is depriving the central nervous system of its normal supply of nourishment. You can see the result of this procedure markedly illustrated in cases of carbon monoxid poisoning, in which there is formed a combination between the hemoglobin and the red cells, and the carbon monoxid, which throws out a greater portion of active hemoglobin-carrying substances. Such patients, if left alone, make a very tardy convalescence, three months being usually required before they can return to normal. If the patient is bled and transfused with normal blood, he will make a prompt recovery, and be around again in a day or two. Clinicians tell us that pernicious anemia is usually a fatal disease, no matter what we do for it. There are the ups and downs, the periods of betterment alternating with periods of depression. We have not yet determined the hemolytic factor that causes the destruction of the red cells in pernicious anemia. It has been our experience in filling these people with new blood that they lose it in eight days, and return to the condition they were in before the transfusion. It was simply a temporary measure tiding them over for a few days. The method should not be followed out generally, because its use may result in useless operation without effecting the ultimate cure of the patient.

As to transfusion in tuberculous patients: The serum from tuberculous patients hemolyzes the normal red cells. In transfusing a tuberculous patient we run a great danger from active hemolysis occurring at the time of transfusion, with the resulting death of the patient, so that in doing transfusion in the case of a patient with active tuberculosis we must be careful that no hemolysis takes place. Clinically, this is shown by ascites in pericardium, pain and cyanosis, without dilatation of the heart. In a case of tuberculosis in which Dr. Crile transfused with normal blood, the patient seemed to do better than did those who did not have the transfusion, but you must shut off the transfusion when the patient begins to complain of pericardial distress with rapidity of the pulse rate.

DR. B. M. BERNHEIM, Baltimore, Md.: In regard to transfusing in pernicious anemia, we talked with Dr. Sloan yesterday and he said that he did not think it was advisable to do it. I asked him whether he had ever transfused a case early in the course of the disease, and he said no. If you will look up the literature, you will find that no one has transfused a case early in the course of the disease. The patients transfused have been nearly moribund. They were treated by physicians and as a last resort were brought in for transfusion, and it was done as an almost hopeless effort to save the patient. I do not believe that it helps matters much to reason about this matter, and to say that we do not know the cause of the blood destruction. That is true. It seems to me that we might take the case immediately after the diagnosis is made, while the patient has some fight left in him, and while his hemoglobin is still up to fifty or sixty per cent. Instead of giving him arsenic and the usual treatment, which is always fatal, why not try a few cases which might give a different result? As regards instruments for transfusion, Dr. Kimpton's instrument seems to be a good one, but no man can use that tube unless he has worked in the laboratory and has paraffined a tube not only once, but many times. No one else can do it. No one can do transfusions in general unless he has tried beforehand. If a man has worked up his technic on animals and developed it, he can do a successful transfusion by any method. The two things are parallel.

DR. V. C. VAUGHAN, JR., Detroit, Mich.: Some ten months ago I had a case that needed immediate transfusion. The patient was difficult to operate on—a new-born babe. We proved that we could withdraw blood from the donor and by the proper use of saline solution mixed with blood inject it from a hypodermic syringe into the vein of the recipient before it clotted. Dr. Freund of Detroit devised the apparatus. We have two needles, two rubber tubes, going to two-way stop-cock. To this stop-cock is attached a glass tube, with a container for normal saline. One needle is thrust into the vein of the donor, the other into the vein of the recipient. We fill the syringe with 1 c.c. of saline solution. Then the stop-cock from the vein of the donor is opened, and we fill the syringe with blood. Then this cock is shut off and the other is opened, and we force blood into the vein of the recipient. That requires no operation, you do not have to cut the skin. We have transfused 150 c.c. without detaching the needles. Anyone can use the method. The blood does not clot.

THE BROMID QUESTION EXPERIMENTALLY CONSIDERED

I. THE RESPONSES OF THE HEART TO BROMID PERFUSION [*]

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Potassium bromid was first prepared by Ballard in 1828. The bromid salts were soon found to be depressant to nerve reactions, for which purpose they have been in use in therapeutics for many decades. In 1868 Rabuteau[1] demonstrated bromid retention in the animal organism after continued bromid feeding. This was of peculiar interest because of the well-known fact that other members of the halogen group, namely, the iodids and chlorids, are rapidly eliminated.

The literature of the bromids is voluminous, but little of it directly concerns the pharmacologic reactions in the body. In 1877 Krosz[2] gave a thorough review of the older literature (to 1875). Busquet and Pachon[3] in 1909, studied the relative toxicity of the bromids as compared with other potassium salts in relation to the activities of the rabbit's heart. Aside from these papers the most valuable contributions to the literature are those that have been determined secondarily in other physiologic studies, including the field of comparative literature on the salt action.

In our laboratories we have undertaken the pharmacologic reexamination of the bromids. It seemed to us advisable to first lay the foundations of our work in a careful examination of the reactions of the organs other than the nervous system to the bromids. In the present paper, therefore, we wish only to report a phase of the work; namely, the reactions of the heart and cardiac apparatus to bromid nutrient mediums.

THE BROMIDS ON THE HEART

The experiments here reported were performed on the hearts of frogs, and on the isolated heart of the warm-blooded animals. As a result of the last four decades of physiologic experimentation it is now well known that not only the heart of the cold-blooded animal but also that of the mammal as well responds very normally in both rhythm and amplitude of contractions through many consecutive hours when fed on a physiologically balanced oxygenated saline solution. Especially through the work of Howell and his pupils we have assumed that the cations or bases are the all-important factors in these inorganic salt solutions, and have given relatively little attention to the anions. Of course, it is taken for granted that isotonicity is a very necessary, in fact absolutely essential, factor under all circumstances. Loeb in numerous papers has emphasized the physical constants, especially that of permeability.

The experiments in this field, for the most part, rest on the assumption that the chlorid anion is relatively indifferent toward the living tissue of the organs—of the heart in particular. It has been assumed that the changes observed in the heart under variations in the saline content of its nutrient fluid are primarily dependent on the variations in the cations. Of these cations the all-important and best-investigated ones are sodium, potassium and calcium.

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[*] Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Rabuteau: Recherches sur l'émanation des bromures, Gaz. hebd. de méd., 1868, 37.

[2] Krosz, I. G.: Ueber die physiologische Wirkung des Bromkalium, Arch. f. exper. Path. u. Pharmakol., 1877, vi, 1.

[3] Busquet, H., and Pachon, V.: Contribution à l'étude de la mesure quantitative des actions d'ions sur les organes vivants et isolés, Jour. de Physiol., 1909, xi, 243.

Starting from this point of view we have carefully examined the variations in reactions of the heart to neutral solutions in which the bromid salts have been substituted for the chlorid salts. In every case our stock solutions have been made up of isotonic concentrations, namely, one-eighth molecular solutions.

RESPONSES OF THE HEART TO BROMID SUBSTITUTIONS FOR THE CORRESPONDING CHLORID CONSTITUENT OF PHYSIOLOGIC SOLUTIONS

Physiologic solutions are based on maintaining the physical and chemical balance represented by the blood. Such solutions must first of all be isotonic with the blood-plasma, a factor which is all-important in every artificial solution. The most commonly used solutions are of course physiologic saline, and Ringer's solution or its modifications. Ringer's solution represents a balanced saline consisting of sodium, potassium and calcium chlorids in proportions present in the normal blood. We have tested the bromids, first, by making a sodium bromid isotonic with physiologic saline; second, by substitution of the corresponding bromid salts in equimolecular quantities for the chlorids in Ringer's solution. These substitutions have been for individual chlorids and for the various possible groups in the solution. The final test has been in entirely displacing the chlorids with what may be called a bromid Ringer's solution.

SODIUM BROMID SUBSTITUTED FOR SODIUM CHLORID IN PHYSIOLOGIC SALINE

Considering the first line of experiments; namely, the sodium bromid for a physiologic saline, we report that so far as the cold-blooded heart is concerned it is exceedingly difficult to demonstrate any sharp physiologic change in reaction of the heart to this solution. It is well known that sodium chlorid alone will not sustain cardiac contractions and that the heart responds to it (NaCl) alone with a characteristic cycle of changes in rate and amplitude. Bromid saline gives almost the identical cycle of changes.

There is a slight variation in the response, but so slight that it would scarcely deserve mention but for the fact that it is quite constant; namely, a tendency to a slightly greater rate in the initial stage of the bromid perfusion, with a somewhat greater depression in the later stages. In other words, the so-called toxic influence, if one apply that term to physiologic saline, is a trifle greater with bromid perfusion.

THE INFLUENCE OF A BROMID-RINGER'S SOLUTION ON THE HEART

Omitting for the present consideration of partial substitutions in the Ringer's solution, attention may be called to the reactions of the heart to a pure bromid-Ringer's solution. The bromid solution used consisted of sodium, potassium and calcium bromids in equal molecular concentration with the corresponding chlorid in the normal Ringer's as we use it in the laboratory. This would give, stated in percentages, the following solution:

BROMID-RINGER'S

Sodium bromid	1.20	per cent.
Potassium bromid..............	.048	per cent.
Calcium bromid	.042	per cent.

This is isotonic with the following normal Ringer's solution:

Sodium chlorid	.73	per cent.
Potassium chlorid	.03	per cent.
Calcium chlorid	.026	per cent.

Frog hearts were perfused with the foregoing bromid-Ringer's solution alternating with chlorid-Ringer's, and also with continuous bromid-Ringer's perfusion through many consecutive hours.

It is well known that the frog heart will remain alive and rhythmic for several days when perfused with normal Ringer's solution, provided only that bacterial infection shall be eliminated. In our laboratories the bromid-Ringer's sustained the heart through twenty-eight hours' consecutive perfusion, the organ still giving good strong contractions at the end of that period. In this instance no effort was made to keep the preparation sterile.

The factor that seems to be relatively constant, though at the same time it must be considered as quantitatively slight, is a mildly accelerated rate, especially in the early stages of bromid perfusion. In the late stages there usually follows a relatively greater decrease in rate under the bromids. These differences are slight and possibly should not be strongly emphasized. At the moment of change from one solution to the other, when it can be assumed that there is an admixture of chlorids and bromids passing through the heart, there is usually a rather pronounced acceleration which affects both amplitude and rate. This can be assumed to be the period when there is a dissociation of ion-protein compounds in the tissues with a shift from the chlorid to the bromid compounds, a factor that probably accounts for the relative instability of the protoplasm at this particular period.

PARTIAL SUBSTITUTIONS OF THE BROMIDS IN A RINGER'S SOLUTION

The experiments in which only one or two of the chlorid salts were replaced by bromid salts practically coincide with the observations which have just been presented. If one gives careful attention to exact isotonic equivalents and maintains a physiologic balance of the cations in solution, then it is practically an indifferent point as to whether the anions shall be chlorid or bromid in so far as the physiology of the cold-blooded heart is concerned.

Experiment to Show the Influence of a Bromid-Ringer Solution Substituted for Chlorid Ringer on the Isolated Heart of a Young Cat.—The heart was kept beating by coronary perfusion with Ringer's solution three parts, and cat's blood one part. At a point the solution was displaced by isotonic bromid solution three parts, and cat's blood one part. The normal rate just before the change was 150 per minute, the amplitude 17 mm. During the perfusion and after one minute the rate was 150, the amplitude 13 mm. After one and one-half minutes the rate had dropped to 141, the amplitude to 11 mm. When the normal Ringer was returned it took a few seconds to displace the bromid Ringer but in ten seconds after the shift the rate was 132, the amplitude 10 mm., showing the greatest bromid depression. One minute later the rate was 135, the amplitude 12 mm. From this time the amplitude and the rate slowly recovered to approximately the normal.

An incomplete series of tests has been made on the relation between the vagus nerve and the frog heart under bromid perfusion. It is well known that under perfusion with Ringer's solution, the vagus nerve maintains its controlling relation to the heart muscle with little change in its efficiency. The vagus nerve is still active under bromid perfusion, but our series of experiments is not complete enough to state whether or not there is local change in sensitiveness to vagus control.

EXPERIMENTS ON THE ISOLATED MAMMALIAN HEART

From the therapeutic point of view, reactions of the warm-blooded heart to the bromids is of more interest perhaps than the reactions of the cold-blooded heart. We have made a number of tests by a method which depends on coronary perfusion. Isolated cat hearts were maintained under a perfusion of 3 parts chlorid-Ringer's solution, and 1 part cat blood. A carefully balanced bromid-Ringer's diluted with the same amount of cat blood was used for testing the bromids.

The warm-blooded heart is more sensitive to the bromids than is the cold-blooded heart. Our tests have not been absolutely constant. Out of thirteen experiments three showed primary acceleration of rate, which is generally obtained in the cold-blooded heart. The remaining experiments show primary depression in rate. In all experiments there was a depression of amplitude. If the bromid perfusion was for only a relatively short period then there followed a gradual but slow recovery in both rate and amplitude on renewing the normal Ringer's and blood. In long bromid perfusions arhythmia often sets in which may be removed with chlorid-Ringer's blood.

DISCUSSION OF RESULTS

In summarizing these results one must admit that the inorganic bromids are relatively indifferent to such organs as the heart of the cold-blooded vertebrates. On the hearts of warm-blooded animals the bromids are in the long run sharply depressant whether they be measured by rate or by amplitude. If the bromids are combined with bases in strictly physiologically balanced solutions they are relatively non-toxic, especially to cardiac muscle. On the other hand, if the salts are used without reference to the physiologic balance of bases it often happens that reactions of the heart are relatively misleading, owing not to the primary toxicity of the bromid anion but to the influence of the base or cation. This is particularly true of potassium bromid. Looking over the literature we cannot escape the conclusion that many of the so-called bromid therapeutic effects are distinctly chargeable to the base with which the bromid has been combined.

Correlation between Complexion and Resistance to Auto-Intoxication.—I should like to call attention to the extraordinary variation in the resisting power of the individual as manifested by the color of the hair, not only to the changes in the fat and color of the skin already referred to, but to all other consequences of auto-intoxication. The darker the hair the lower is the resisting power to auto-intoxication, and the more conspicuous are the changes which result from it. On the other hand, if the hair is red or of a peculiar towy color the individual has a minimum of resisting power to the action of these poisons, and that resisting power varies directly with the distribution and with the *intensity* of the redness of the hair. This is manifested very conspicuously in the influence exerted by the toxins on the appetites of the individual. The darker-haired subject will loathe the sight of food and frequently abhor any sexual relationship, while the red-haired subject rarely manifests these effects, even in the extreme conditions of intestinal stasis. This influence of toxins on the normal appetite is of far-reaching importance in our present state of civilization and is the source of much misery, discontent and trouble, to which I will not do more than allude here.—F. W. Andrewes, M.D., in *Proc. of the Royal Soc. of Med.*

NON-SURGICAL TREATMENT OF CIRRHOSIS OF THE LIVER *

N. S. DAVIS, JR., M.D.
CHICAGO

In discussions of portal cirrhosis of the liver (atrophic cirrhosis) it is stated that death with rare exceptions occurs in from six to eighteen months after the appearance of ascites and other symptoms most characteristic of the disease. For years I watched cases of this disease running a course of the duration mentioned, and alleviated the discomfort of the patients as best I could; but I treated them without hopefulness.

After patients with this disease began to be treated surgically I saw a few recover and return to work; but more of them promptly ran a fatal course. For example, recently I saw a stout and vigorous policeman who had a Talma operation ten years ago on my recommendation.

Moreover, a case of spontaneous recovery came under my observation. A man aged from 55 to 60, with ascites, some anasarca, a quick, weak heart, and cirrhotic liver was under my care in Wesley Hospital. Traces of albumin and casts were found in the urine at first from time to time, but after a few weeks they were constantly present in small quantities. The radial arteries were thickened. He was placed on a milk and farinaceous diet, kept in bed and given physic. To the surprise of those of us who were watching him, the anasarca lessened and disappeared. Later but much more slowly the ascites lessened and finally disappeared. Simultaneously the heart grew stronger. He left the hospital and returned to his work as a shoemaker. About eighteen months later he was brought back to the hospital with all of the symptoms of chronic interstitial nephritis and uremia. In a few days he died and came to necropsy, when general arteriosclerosis, hypertrophy of the heart, contracted kidneys and atrophic cirrhosis of the liver were demonstrated. The development or progress of the renal lesion and hypertrophy of the heart evidently caused the disappearance of dropsy originally due to the cirrhosis of the liver. Rest and suitable dietetic treatment helped to produce a physiologic recovery from the hepatic disease.

Such cases prompted me to study again the literature of hepatic cirrhosis, endeavoring to find some clue to a rational treatment of the disease.

It need not be said that the anatomic changes in the liver produced by this disease cannot be removed. The symptoms which precede fatal results, however, are symptoms of impaired function and intoxication and are not due to the extent of the anatomic changes. It has long been known that extensive advanced hepatic cirrhosis is often found at necropsy in those who never have had ascites or other of the later symptoms of the disease. On the other hand, a mild grade of cirrhosis is sometimes associated with ascites and the symptoms of fatal disease. To repeat; the grade of cirrhosis is not the factor which leads to fatal results.

Pathologists have taught us another lesson. They find that a history of ascites and of other symptoms of hepatic insufficiency characteristic of the disease are wanting in 50 per cent. or a little more of the cases seen at necropsy.

Therefore we are justified in concluding that life and apparent health are compatible with extensive hepatic cirrhosis, which has been developing and has existed for years. In other words, so long as the hepatic functions are well maintained and symptoms of toxemia are absent, life and apparent health are maintained. Therefore when we speak of hepatic cirrhosis as a disease we must think of it not only as an anatomic change in the liver, but also as a complex of disturbed function and intoxication associated with a characteristic anatomic lesion of that organ. Treatment must be directed then to the relief and prevention of functional disturbances rather than to the anatomic lesion.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

By experience with renal diseases and by their study, I had become convinced that often coincident hepatic inactivity precipitated dangerous and fatal intoxication probably generated by toxins or infectious matter in the gastro-intestinal tract, and that the success of the treatment of the renal diseases by starvation or by milk and free catharsis was due more to effects produced on the liver and intestines than to effects on the kidneys. Therefore I resolved to try faithfully a prolonged milk diet in the next case of hepatic cirrhosis which came under my care. A milk diet has been used empirically for many years in the treatment of this disease, and numerous instances of recovery while using it can be found in the literature. Before, however, it had not seemed to me a rational mode of treating the disease, and accordingly I had prescribed milk only as a part of a simple diet which I believed these patients required. Moreover, there were some reasons for suspecting that the lesions and symptoms of hepatic cirrhosis might be due to a chronic infection of the liver. As I had used hexamethylenamin in cases of cholecystitis with apparent good results, I decided to experiment with it also in cases of hepatic cirrhosis, because of its reputed antiseptic powers.

REPORT OF CASES

Case 1.—In June, 1906, I was consulted by F., cook in a restaurant, aged 33, a thin, pale, small man with abdomen distended by fluid, and legs and feet edematous. The superficial abdominal veins were prominent. Ascites had existed for three months. He had been tapped twelve days before and a "bucketful of fluid withdrawn." The upper border of his liver was at the nipple line. Cardiac dulness extended 1 inch to the left of the nipple, though the apex-beat was just beneath the nipple. The pulse was 100, regular and tense. The urine, dark amber, of specific gravity 1.022, did not contain albumin or sugar but did contain much indican. The nose had bled often. The patient did not complain of gastric distress, but his appetite was diminished and his tongue coated. There were no hemorrhoids and he was not jaundiced. He never had had severe abdominal colics. His sleep was good. He had drunk heavily of whisky beer for years.

The patient was not seen again by me until sixteen days had intervened. In the meantime he had been tapped once more; but ascites had redeveloped to the same degree and his physical condition was the same. At this time he began treatment under my guidance. July 18, he complained of feeling weak and drowsy, but otherwise was doing well. The bowels moved copiously several times daily.

A week later drowsiness was gone and the patient did not feel so weak. The abdomen was less distended and there was little edema of legs and feet. The skin was clearer.

A month after he came under treatment there was much less ascites and only a trifle of edema about the feet. The liver then could be palpated. Its surface was rough and hard and the organ was enlarged. At no time had there been any fever. The bowels kept loose. A week later the abdomen was scarcely distended, though a small amount of fluid could be demonstrated in it. Pulse was 102, hard and of medium size.

During the next few days the patient's abdomen became a little more distended and edema reappeared in his feet. The pulse was softer and quicker. The urine was dark and contained bile. Appetite was less. There was no fever.

Two months after he came under treatment there were no ascites and no edema. He felt stronger and better. A month later there was still no ascites. The pulse was from 90 to 95, regular and stronger. Two weeks later the pulse was 78 and the patient was doing well in all ways.

Three months later he was stronger, and for six weeks had been doing full work. He had gained flesh. The pulse was normal.

Two months later he went to Italy and while away began to drink wine and beer. About ten months after he first came to me and a month after returning from Europe I found once more a little ascites. He went on a milk diet and the medication formerly used. A week afterward no ascites could be found and he felt better. During the next ten days he gained 5 pounds on a more generous mixed diet.

A year after he first came under treatment, the liver was as large and rough as before but there was no ascites and he continued to do full work.

I saw this patient from time to time during the following five years. He had no symptoms of hepatic trouble though occasional minor ailments. Six years after he first came under treatment I saw him with Dr. Walter Allport when he was having mild delirium, probably due to the drinking of beer. Shortly thereafter it was evident that he had cholecystitis and probably gall-stones. After some weeks, as he did not improve, he was operated on by Dr. Walter Allport, when the omentum was found adherent to the intestines and everything about the gall-bladder was adherent to it and the intestines to each other. It was difficult to get at the gall-bladder, but it was emptied of numerous small stones and drained. The liver, where it could be seen, was uniformly yellowish-white and where it was touched very hard. The patient became delirious after the operation and later comatose, in which condition he died.

When this patient came under my care after his second visit to me I directed him to keep his bed and to avoid walking even about the house more than was necessary. He was directed to take a glassful of milk every three hours from 7 in the morning to 10 in the evening and no other food or fluids except a swallow of water if he wished it. At the same time hexamethylenamin was given in 5-grain doses three times daily and at bedtime 1/10 grain of elaterium (Clutterbuck's).

After a few days he was permitted to eat fruit in addition to the milk. After a week and some evident improvement, he was given eight glasses of milk instead of six.

About three weeks after he came under treatment, to vary his diet, which was becoming monotonous, he was allowed bread or crackers or a dish of cereal once daily. About two weeks after he began treatment ¼ grain of powdered strophanthus was added to his medication four times daily. After this gradually his pulse became slower and stronger and the edema lessened more rapidly.

Very gradually his diet was varied more, though he was urged to make milk the staple and to eat only a trifle of other things. Moreover, care was taken that the diet should be one poor in salt.

When, as happened once, ascites and edema increased slightly after being nearly removed, a strict and restricted milk diet was temporarily resumed.

This patient lived for six years after a full development of cirrhosis of the liver with ascites and edema, and for five and one-half years did full work.

Case 2.—J. L., bartender, aged 62, seen first in October, 1910, noticed three weeks before that the abdomen was enlarged. When I saw him it was greatly distended with fluid and the abdominal veins were prominent. There was little or no edema about the ankles. The pulse was full, strong and 90. The urine, dark amber, of specific gravity 1.025, contained neither albumin nor sugar. The heart was normal in size and its sounds were normal. The patient was constipated, but did not complain of gastric discomfort.

He was urged to keep his bed and was limited to six glasses of milk daily for food. He was given a capsule containing hexamethylenamin, 5 grains, and extract of digitalis, 1/5 grain, three times daily, and elaterium (Clutterbuck's) 1/6 grain at night.

A week later the abdomen was no longer tensely distended, but it contained considerable fluid. The liver could not be felt, but percussion showed that its upper border was at the normal point, and that it was about 2 inches wide on the parasternal line. The pulse was soft and 90. The abdominal veins were still full, but less so than the week before. The patient was very hungry and therefore was permitted eight glasses of milk daily, and fruit and boiled rice once daily.

A week later only a trifling quantity of fluid could be found in the abdominal cavity. The liver was demonstrably narrow and its undersurface rough and not tender. The pulse was still 90.

The patient's menu was increased by the addition of bread without butter, but with fruit-jelly if he desired it, cornstarch and tapioca pudding, blanc-mange and one egg without salt.

A week later there was no ascites, the pulse was 85, and the patient felt stronger and looked better.

Five weeks after the patient was first seen there was no ascites; the pulse was 78 and was full and strong. He felt well.

This patient was seen at intervals for six months, during which time the ascites did not return. He resumed his work and felt as strong as when in usual good health.

The change to a general diet was made slowly and an abstemious diet was long maintained. He was given hexamethylenamin for several months, but the digitalis was stopped when his heart became normal in rate. The elaterium was stopped soon after the ascites disappeared, but other laxatives were needed from time to time.

Recently, nearly three years after this patient came under treatment, I heard from a friend of his that he was well and working steadily.

CASE 3.—P. L., bartender, aged 54, was pale and thin. The abdomen had been swollen for two months, the feet and legs edematous for two weeks, and for two days the scrotum had been much distended with fluid. The abdomen was very tense. The heart was quick, 100 and normal in size, and its sounds were normal. The urine had a specific gravity of 1.021, and contained neither albumin nor sugar, but a small amount of bile. He had a dry, hacking cough, but there was no evidence of tuberculosis. The patient was feeble and depressed. He had been vomiting in the morning for several months. He had been in the habit of drinking many whiskies daily for years, but had taken comparatively few during the last weeks.

He too was placed first on a diet of six glasses of milk and on hexamethylenamin, digitalis and elaterium.

In ten days the edema was greatly lessened in the abdomen and in all the tissues. At the end of the third week there was only a trifle demonstrable about his ankles toward nightfall. He did not vomit after the first few days that he was under treatment.

A month after he was seen first by me no fluid could be found in the abdomen. The liver could not be felt beneath the ribs, and the area of liver dulness was narrow. There was tenderness in the center of the epigastrium. The pulse was 80 and of good quality. He rarely coughed.

After this date the patient began drinking and eating whatever he had an appetite for. Ascites returned, though in a moderate degree, but after a period of two weeks of treatment it was again undemonstrable. Unfortunately, after this date, the patient did not return for advice.

CASE 4.—C. R., cook in hotel, aged 52, for four months had ascites and edema of legs and feet. The pulse was soft and quick. The heart was quick and normal in size, and the sounds were normal. The urine, of specific gravity 1.022, contained no albumin, sugar or bile. The face was thin, worn and cachetic. The hemoglobin was 90 per cent. by Tallquist scale. A month before some blood was passed from the bowels during three or four days. The fluid in the abdomen had been withdrawn ten times by paracentesis before I saw the patient. He was given the same initial treatment as the others.

A few days later he had again a small hemorrhage from the bowels. In three weeks the edema was gone and the ascites greatly diminished, and he was much encouraged. A few days later he died from copious hemorrhage into the stomach.

BENEFIT OBTAINABLE BY MEDICAL TREATMENT

I shall not lengthen this report of cases by describing two more patients who improved under treatment, losing ascites and regaining apparent health, who were watched for too short a time for me to know whether or not permanent good results were obtained.

I call attention to these cases not because there is anything novel in the treatment but to draw attention to the great improvement and sometimes to the prolonged or permanent good which can be done by medical treatment. Patients suffering from cirrhosis of the liver with ascites and other evidence of serious hepatic disease should be regarded not as hopeless or as capable of help only by surgery.

Alcoholic beverages must be forbidden, not only during treatment but also after apparent recovery. It is well known that cirrhosis of the liver occurs rarely in those who do not use alcoholics, and therefore that alcohol cannot be the immediate cause of the disease. Nevertheless, its baneful influence in producing cirrhosis is fully appreciated, and the occurrence of relapses in Cases 1 and 3 after its use illustrates the need of forbidding the employment of alcoholic beverages.

Cases of recovery on a milk diet have been reported at intervals for a long time. When there is ascites and edema a restricted milk diet will as well as a "dry" diet help to cause an absorption and elimination of the fluid, and with much more comfort to patients. Six glasses of milk daily are not sufficient to maintain strength, but it will maintain life, and if a patient is at rest in bed will prevent much craving for food and drink. This has been my experience in all kinds of dropsies. The fact that it constitutes a diet almost free from salt is important.

Important, however, as the effect of a milk diet is in helping to rid patients of dropsy in cirrhosis of the liver, milk is more important because it is a bland food which, in the course of digestion, produces less irritating products than almost any other. Moreover, it is held by some that good results are due chiefly to the marked change in the bacterial flora in the intestines which an exclusive milk diet effects; and certainly no diet will more surely relieve the gastro-enteritis which forms a part of all active cirrhoses of the liver.

As soon as improvement is evident as shown by a feeling of greater well-being and diminution of ascites and general edema, the quantity of milk can be increased to eight glasses daily. Fruit can be permitted in moderation at almost any time. I make it a practice, however, to give only milk at first, and when after some days the patient greatly craves a variety, I permit the addition of fruit and some time later a little of starches which require in their preparation a minimum of salt, such as corn-starch or sago pudding, blanc-mange, and later a little bread. When the general edema is gone and ascites is nearly gone I prescribe eggs without salt in milk or cooked in a custard or boiled or poached. When the dropsy is gone and the patient is in all ways improved, a general diet may gradually be resumed; but a milk diet or almost exclusively a milk diet must be maintained for about two months at least. These patients must be taught to eat abstemiously, therefore, and confine their diet to very simple kinds of food. They must remember that the liver never will be perfect and that the gastro-intestinal tract may be deranged again and ascites and symptoms of toxemia characteristic of advanced cirrhosis may be produced.

It is essential that food be not allowed to accumulate in the intestines and there undergo extensive chemical modification by bacteria; therefore the bowels must be moved thoroughly and daily. When there is dropsy and it is desired to cause a copious elimination of liquid by the bowels, a purge is required. Elaterium is my choice both because it provokes large liquid stools and because it is reputed to promote the elimination of toxins. The first day it may be necessary to give $\frac{1}{4}$ grain two or three times. Thereafter from $\frac{1}{4}$ to $^{1}/_{10}$ grain given at night is usually sufficient, and in many instances a single dose the first day is all that is needed. If elaterium is given at bedtime I find that it rarely produces nausea or pain, but often patients are awakened before morning to evacuate the bowels. When there is no need of liquid stools, milder laxatives, such as cascara or aloes or combinations of these and phenolphthalein will answer.

When in cirrhosis of the liver there is ascites, and especially when there is anasarca, the pulse is quick and the heart is not strong and is sometimes dilated. The myocardium is affected and weakened by the toxins which are provocative of the symptoms of this stage of the disease. At necropsy when death is due to cirrhosis of the liver the myocardium is usually flabby, sometimes fatty and often the heart is dilated. The functional power of the heart frequently is lessened by its displacement by fluid in the abdominal cavity, and also the circulation is interfered with by imperfect expansion of the lungs and movements of the diaphragm from the same cause. Usually blood-pressure is low; especially is this true in the later stages of the disease. Digitalis or other drugs of its group are useful as aids in eliminating the fluids accumulated in the tissues and in maintaining generally a better circulation. Usually about the time the ascites disappears or soon thereafter the heart becomes normal in rate. The relief of the toxemia and rest usually restore the strength of the heart, but in some cases, especially when patients are decidedly anemic, iron and strychnin are also useful.

As explained already, hexamethylenamin was given experimentally because it had been demonstrated that it was eliminable in the bile as well as in the urine, and probably acted as an antiseptic in the hepatic ducts and gall-bladder. If cirrhosis of the liver is due to infection of the liver, it was thought to be the best antiseptic which would reach the organ and be eliminated with its secretions. The experiments of Burnam[1] have taught us recently that hexamethylenamin is not decomposed so as to set free formaldehyd in the bile; but these experiments have not yet been confirmed, and much clinical experience seems to prove the utility of the drug in infections of the gall-bladder. Nevertheless, it is doubtful if it was essential to the improvement obtained in the cases which I have described. Rest, thorough elimination by the intestines and a prolonged milk diet, followed by a slow, graduated change to a mixed diet are undoubtedly the essentials of good treatment.

Such patients should be kept recumbent as long as they are on a decidedly insufficient or restricted diet. This is necessary to prevent undue loss of strength. Patients with the abdominal cavity full of fluid, with the lungs thereby compressed, and the movements of the diaphragm impeded, often say that they cannot lie down with comfort and prefer constantly to sit in a chair. If they are encouraged to stay in bed, however, at first bolstered up, usually the second day they find themselves more comfortable and by the third or sooner they can lie down almost or quite flat. In bed they sleep much better and are surer of perfect rest.

If a patient's abdominal cavity is distressingly full of fluid which is not quickly lessened by the treatment just outlined, I would not hesitate to withdraw it through a cannula; but I would employ just as patiently the restricted milk diet and purgative both to prevent the reaccumulation of fluid and to change the bacterial content and fermentation within the intestines and possibly the production thereby of harmful toxins.

A full discussion of the medical treatment of the complications of cirrhosis of the liver such as hemorrhage from nose, esophagus or intestines, cardiac failure, nephritis, peritonitis and pulmonary affections cannot be undertaken here.

I hope that I may tempt others to try patiently the treatment which I have outlined, for I am confident that the life of patients having cirrhosis of the liver often can be greatly prolonged and a degree of health regained which will make life useful and comfortable.

7 West Madison Street.

ABSTRACT OF DISCUSSION

Dr. E. D. Brown, Minneapolis: I should like to ask whether Dr. Davis ever followed a case to necropsy after administering elaterium. I followed two cases in which smaller doses were given to necropsy and in both instances a very marked congestion of the intestine was found. That discouraged my use of elaterium. Possibly I am wrong and the congestion may have been due to other causes.

Dr. B. Fantus, Chicago: This paper brought forcibly home to my mind a necropsy which I saw in a case of cystic kidney in which both kidneys were so extensively degenerated that there was hardly any kidney material left, and yet the patient had been perfectly well until within a few days before his death when he developed uremic symptoms suddenly and died in coma. The wonderful compensation that seems to occur in gradually developing destructive diseases of the viscera is well illustrated by the cases that Dr. Davis has cited, and while he was outlining the treatment that he has found successful, I was wondering to what extent the Talma operation might not owe its success to the coincident absolute rest and restricted diet that precedes and follows the operation.

Dr. Alexander S. von Mansfelde, Ashland, Neb.: I should like to have Dr. Davis state specifically what manufacturer's elaterium he uses. There are many preparations on the market which are not good, and it is difficult for men living hundreds of miles from Chicago to choose the best.

Dr. Ray L. Wilbur, San Francisco: These deaths we can call mechanical deaths due to interference with the circulation. Death in cirrhosis of the liver often occurs in this way. It seems as though we should have some means at hand to control the mechanical factors. I should like Dr. Davis' opinion of the systematic administration of calomel in combating the ascites of portal cirrhosis. I have had good results from calomel in 3-grain doses three times a day for three days, together with a milk diet. The effect is often a large output of urine and a reduction of the fluid, which persists for a much longer interval than after tapping under such conditions.

Dr. N. S. Davis, Chicago: I have never given calomel just as has been described, but only occasionally as a purgative. I use Clutterbuck's elaterium. In my hands it has worked extremely well. Probably elaterin would do as well, although my own experiments with it have not been so uniformly good. I have used Clutterbuck's elaterium many times, not only in this disease, but in renal and other diseases, when I wished to get rid of dropsies. I have rarely seen it cause any discomfort when given at bedtime. Very rarely it has produced nausea and vomiting and had to be discontinued. I have never seen one of these cases go to necropsy, and consequently I cannot confirm the possible effects on the intestines which have just been described to us, but I have used it so much clinically over many weeks of time without ill results that I do not think that there can be any prolonged or permanent change produced by it in the intestines. Of the first case which I described it might be said that the tappings may have produced a local peritonitis and the adhesions found at the time of operation may have produced a collateral circulation and a disappearance of the ascites, and that this improvement was not the result of dietetic treatment. If that were the only case I might think this explanation probably correct. However, you will notice that there were relapses in that case and the ascites did reappear to some extent, but was removed by dietetic management and treatment. In the second case there was no tapping of the abdomen at all, and the result was just as good. Considering all the cases together I am convinced that the mode of treatment, rather than paracentesis, had to do with the good results obtained.

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[1] Burnam, Curtis F.: An Experimental Investigation of the Value of Hexamethylenamin and Allied Compounds, Arch. Int. Med., October, 1912, p. 324.

I am sure that in some, and possibly all, of the cases treated surgically with success the long-continued rest, milk diet or very restricted diet and cleansing of the intestinal tract, such as is assured by good hospital care, had as much, if not more, to do with recovery than the operation. I am sure this is true in the case of the policeman referred to in my paper. His case I recall with distinctness.

SOME NEW PERIMETRY INSTRUMENTS*

Clifford B. Walker, A.M., M.D., Boston
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These new accessories to the perimeter were devised for more rapid and accurate work in the large neurological surgical clinic of Dr. Harvey Cushing and have been found very useful both for routine and for special field-work.

Figure 1 represents two of the graduated disks which range in size from 1/64 sq. cm. to 16 sq. cm., the size of each disk being one-fourth the next larger and four times the next smaller in size, the size of the unit disk being 1 sq. cm. Flat circular test objects only are used and are mentioned in terms of area, in order to avoid confusion in size involved if both squares and circles, mentioned indiscriminately in terms of side or diameter are used. Each disk is set at right angles to the disk on the other end of the rod so that only one disk at a time can be seen as it is moved on the perimeter. The colors, red, blue and green, are of mat paper, matched with the primary spectral colors, and are protected by a knife-edge rim so that they last for months without changing. The lack of appreciable rim is considered an important feature especially for the white disks. Graduated disks give much information particularly in hypophyseal cases and in glaucoma, partial optic atrophy or block and anterior lesions generally after the method of Rönne and Bjerrum.

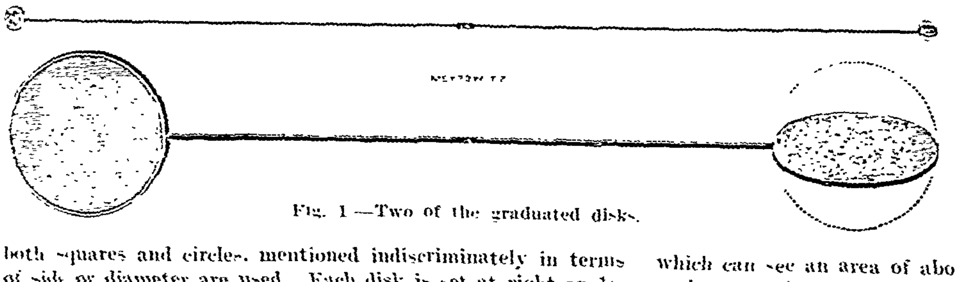

Fig. 1.—Two of the graduated disks.

Figure 2 represents the color interchanger, a very useful instrument for routine work, and especially for determining the presence of color interlacing. Any of the three colors may be exposed in rapid sequence at the center of the blade, while by a further motion a white rimless spot will protrude at the end as the colors disappear. Flat circular test objects of normal size are used, that is, ¼ sq. cm. in area, corresponding to the indiscriminately used square or circle of 0.5 cm., side or diameter. The color changes are made noiselessly and without any motion by which the patient may know or guess the next color. The examiner knows the color displayed, without looking, by the position of his thumb and fingers and by feeling a slight click as the adjustable tension spring on the handle slips into corresponding notches. With such an instrument and a plain perimeter a complete field may be taken more rapidly and accurately than with a mechanical perimeter, and color tests, such as inversion and interlacing, can be made in much more nearly the same color phase than with the latter.

Figure 3 represents the combination blinder and macular selector. The plain blinder is also made up without the combination and can quickly be adjusted to completely cover an eye, light-tight, without obstructing the field of the other eye, as the various makeshifts used are liable to do.

The instrument is entirely of black nickeled metal and easily sterilized. When a central scotoma is present in one eye only, the shutter on the combination blinder covering the good eye may be opened and the conical tube adjusted so that fixation is obtained coordinately from the covered eye, which can see an area of about 1 sq. cm. at the center of the perimeter. The tube has a ball-and-socket adjustment, so that allowance may be made for strabismus if necessary. To examine the exact center the mirror may be adjusted in place of the tube so as to reflect into the covered eye a spot placed to one side. While the patient observes this secondary fixation spot reflected in the mirror, both the spot and the mirror may be adjusted to maintain the proper direction of the scotomatous eye, as may be determined by fusion tests. In this manner cases of monocular central scotoma that can be examined only roughly, or not at all, by other methods may be successfully handled with these instruments. Further use of these instruments in making hemiopic pupillary tests may be found in another paper presented at the last annual session of the American Medical Association.[1]

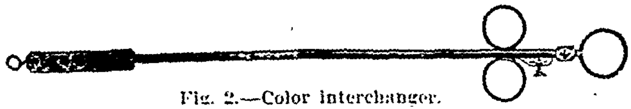

Fig. 2.—Color interchanger.

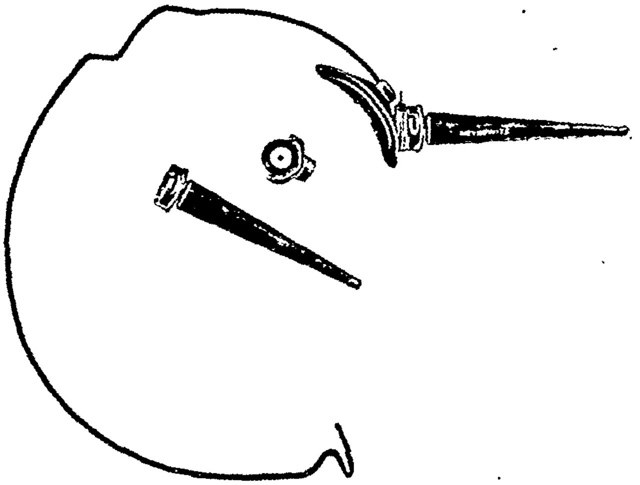

Fig. 3.—Combination blinder and macular selector.

233 Charles Street.

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* Presented at the Meeting of the New England Ophthalmological Society, March 11, 1913.

[1] Walker, C. B.: The Topical Diagnostic Value of the Hemiopic Pupillary Reaction and the Wilbrand Hemianoptic Prism Test with a New Method of Performing the Latter; to be published in The Journal.

Therapeutics

TETANUS

In spite of pathologic and bacteriologic investigations, and in spite of careful studies in the treatment of this acute, very toxic infection, the last word has not been spoken in regard to its scientific treatment. We therefore welcome the splendid report of Dr. A. P. C. Ashhurst and his assistant, Dr. R. L. John of Philadelphia, on their investigations as to the proper treatment for tetanus.[1]

As already stated, we have yet to learn the best treatment for this disease, though its causative bacillus was discovered by Nicolaier in 1884, and a pure culture was isolated by Kitasato in 1889. Ashhurst carefully reviews the scientific investigations showing that the disease is a pure toxemia, and that the bacilli or spores may exist indefinitely in the tissues and that "no symptoms will be produced unless toxins are formed." On the other hand, "if this toxin is introduced into the system it will produce all of the characteristic symptoms of tetanus, even if no bacilli are present." When small animals are inoculated in the laboratory, the infected limb is the first to show tetanus, and this form is called "tetanus ascendens." In larger animals and in man, when the inoculation is by the bacillus of tetanus, "the symptoms begin first in the muscles of the neck and jaws no matter where is the point of inoculation." This form is termed "tetanus descendens." Though the most frequent point of inoculation in man is in the hand or foot, and a certain amount of poison must soon reach the nearest motor nerves and ascend to the spinal cord, still at the same time the toxins will be absorbed by the lymph-vessels, enter the general circulation and reach the end plates of all the motor nerves throughout the body.

A form of cephalic tetanus is recognized in man which Ashhurst believes is primarily a local tetanus due to the absorption of toxins into the cranial nerves before they reach the general system.

It has been pretty conclusively shown that the toxin of the tetanus bacillus ascends the peripheral nerves, especially the motor, to the spinal cord. When it reaches the cord the symptoms are produced, and these symptoms are first localized in the part supplied by the nerves from the section of the cord first attacked, although the toxin soon disseminates both up and down the cord.

This toxin soon forms a combination with nerve tissue which it is difficult to break up and eradicate. Ashhurst believes that "the nearer the toxin approaches the spinal cord in a nerve, the more impregnably intrenched does it become in the nerve tissue"; also, the readier the access of the toxin to the central nervous system, the smaller is the amount required to kill.

The incubation period depends on the distance from the cord of the site of infection, and if a local tetanus in an animal, for instance, has lasted less than two days, general poisoning may be prevented by section of the nerves of the part or by curare.

The toxin ascends the nerves to the cord by the way of the axis cylinders and is diffused in the cord more or less rapidly, even the sensory portions of the cord becoming affected. The more the sensory portions are affected the more acute is the pain and the more irritable the patient to sensory disturbances. Sooner or later the toxin enters into the general circulation—for the toxin has been found in the blood. As soon as this has occurred, of course, the disturbance of the cord becomes general.

As yet no specific pathologic findings in tetanus have been discovered, though tetanus bacilli have been found in lymph-nodes near the source of infection. The symptoms are due to the stimulation of the motor cells in the spinal cord and to the hypersensitiveness of the sensory cells.

The authors tabulate the therapeutic indications to be met as follows:

1. To prevent the development of tetanus.
2. To remove the source which supplies the toxin, that is, the bacilli of tetanus.
3. To head off and neutralize the toxins already formed.
4. To depress the function of the spinal cord.
5. To sustain the life of the patient by proper nourishment, nursing, etc.

PROPHYLAXIS

It is a well-recognized fact that in the case of those who do farm work, barn work, and work about horses or cattle, any injuries received on the streets or during these occupations are more liable to the development of tetanus than injuries received otherwise. It is also true that a suppurating wound or even a fresh wound, innocent at first, may become infected with the tetanus bacilli if the wound or suppurating part is imperfectly cared for. Ashhurst is very sure that if the original wound is properly treated the development of tetanus will be prevented.

Ashhurst and John suggest the following preventive treatment: First, the surrounding skin should be painted with a 3 per cent. alcoholic solution of iodin. (The U. S. P. tincture of iodin is 7 per cent.) Next, all parts of the wound should be made accessible by wide incision, if necessary. This is especially true of a punctured wound. Then the wound should be cleaned by the scissors of all tags and loose shreds of tissue, and the whole wound swabbed with this 3 per cent. iodin solution. The wound should next be dressed with gauze soaked in the same solution. Strong caustics are not used and are inadvisable as they cause sloughing, and further produce a good focus for the growth of tetanus bacilli.

The dressings should be done daily at first, the wound being exposed and thoroughly irrigated with hydrogen peroxid solution, and then again dressed with the gauze soaked in the iodin solution. As soon as healthy granulations are formed, balsam of Peru applications are suggested.

The prophylactic use of antitoxin has often been unsuccessful, but the reason is probably that it has so many times been incorrectly used, and the mortality of tetanus, even when antitoxin has been previously used, has remained very high. The three things to be considered are the frequency, the site of the injection and the quantity to be administered.

The antitoxin is probably all eliminated from the system in from eight to ten days after the injection, and it is important, if antitoxin is to be useful, that it should be present in the system for two or three weeks after receipt of the injury, especially as it cannot be determined when the tetanus bacillus first gained access to the wound. Hence, there should be a second injection of antitoxin about the end of the first week, and perhaps a third injection at the end of the second week. The use of antitoxin powder directly on the wound should not be relied on. The antitoxin should be injected "as near the wound as possible so as to flood the tissues in the immediate vicinity," and if possible it should be given intramuscularly so that the motor nerves may absorb it rapidly. If any nerves are exposed in the wound, antitoxin should be injected into them.

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[1] Ashhurst, A. P. C., and John, R. L.: Rational Treatment of Tetanus with Report of Twenty-Three Cases, Am. Jour. Med. Sc., June and July, 1913

The authors believe that 1,500 units is the proper prophylactic dose. (Tetanus antitoxin is furnished in tubes holding 10 c.c., representing strengths of 1,500. 3,000 and 5,000 units.) While certain individuals may show an urticarial rash and possibly some joint pains, even these evidences of anaphylaxis are not common and no dangerous symptoms seem to result from the use of tetanus antitoxin.

TREATMENT AFTER THE DISEASE IS PRESENT

The first step is to remove the region in which the tetanus bacilli are located, which means the region of the wound, if this can be reached. To this end the wound should be opened widely and thoroughly cleaned of foreign bodies and degenerated tissue. It should then be swabbed with the 3 per cent. alcoholic solution of iodin, washed with peroxid of hydrogen solution, and packed loosely with gauze soaked in the iodin solution. In this case again the authors believe that cauterization should not be done. Good surgical consultation may sometimes advise the amputation of the part, if such is possible, leaving the stump open for the treatment described. If amputation is done, the nearest lymph-nodes should also be removed. By the use of tetanus antitoxin the mortality from this disease seems to have been reduced to at least one-half what it was, and if the authors' rules are followed, it may be reduced by two-thirds at least.

There are various methods of using the antitoxin in tetanus, namely, the subcutaneous, intramuscular, intravenous, intraspinal and intraneural. The authors believe that the intraspinal (subdural) and the intraneural injections are the best. The next best are the intravenous and next the intramuscular, the subcutaneous not being of great value. One of the great advantages of the intraspinal method is that it takes so much less antitoxin to be effective. The intraneural injection into a nerve of the infected region will act much more slowly, but is in line with the absorption of the toxin of the germ. In other words, the injection into the nerve tissues follows the route of absorption of the toxin. Of course in intravenous injection, that is, by the circulatory route, the parts affected will also be reached by the antitoxin, but this method is probably not so effective. The specific action of the antitoxin will not be manifested for several hours.

Intraspinal injections should be given once in one, two or three days, depending on the symptoms. Intraneural injections may be repeated daily if required. By the intravenous route one or two injections in twenty-four hours should be sufficient.

A maximum amount of antitoxin should be given the patient as soon as possible, and the greater the delay in giving the antitoxin, the greater the amount that is needed. It is therefore easily recognized that by the subcutaneous method enormous amounts must be given at enormous expense and with nowhere near the value of the intraspinal or intravenous method. Intravenously the authors advise from 15,000 to 25,000 units at once, the same dose to be repeated if no effect is apparent or if the good effect wears off, in about eighteen hours. Intraspinally they advise from 3,000 to 10,000 units, the dose to be repeated in twenty-four hours unless the symptoms have markedly ameliorated. The authors have injected 1,500 units into the sciatic nerve-sheath and 750 into the anterior crural and obturator nerves. These injections into the nerve trunks must, of course, be made slowly.

Other combative treatments of this poison are phenol (carbolic acid), magnesium sulphate and cholesterin, all given by injections. While phenol may be well tolerated by these patients, the authors believe that all of these treatments are of little value and that spinal injections of magnesium sulphate are dangerous.

Combating the tetanic symptoms of this disease by drugs of antagonistic physiologic activity is more or less successful and of great aid in conjunction with the antitoxin. Chloral and bromids still remain the best spinal depressants. While chloretone has been used, it is more dangerous and should probably not be given in an amount sufficient to cause spinal anesthesia. The action of morphin as a spinal stimulant is well known, and for morphin to overcome spinal irritability the dose must be almost toxic to the cerebrum and higher centers. Ashhurst and John use large amounts of chloral hydrate and potassium bromid, sufficient to cause sleep and quiet, these narcotics being given sometimes by the mouth and sometimes by the rectum.

While fighting the disease, the care of the patient should not be forgotten. A purgative should be early given. Simple, nourishing, non-stimulating food should be given by the mouth, if possible, or by the nasal tube if necessary. Absolute quiet should, if possible, be maintained. Distention from retention of urine should not be allowed. If water is not well absorbed, and especially if there is peritoneal or pelvic inflammation, saline injections into the colon should be given.

Injections of the antitoxin into the spinal cord or into nerves, and perhaps intravenously, should be done under chloroform anesthesia.

Ashhurst and John give tables of their statistics, and carefully describe twenty-three cases of the disease, all of which may be studied with interest and profit.

Two Cases of Almost Complete Excision of the Bladder.—In 1888 Tizzoni and Poggi demonstrated the possibility of total cystectomy. They excluded an intestinal loop in a dog, then resected the bladder with the neck, replacing it by the loop of intestine which was to serve as a receptacle for the urine. After awhile the dog micturated normally but on postmortem it was found that the dog had developed a new bladder, to which the intestinal loop was only a useless diverticulum. Schwarz, a pupil of Tizzoni's, experimented further without making an intestinal loop. He found that it was possible to take off the bladder immediately above the ureteral orifices and that from the bladder stump and the upper parts of the urethra a new cavity will be formed which is capable of retaining urine. Nicolich reports two cases in *Folia Urologica* 1913, vii, 371, which show that the same thing can be done in human beings. The first patient, 72 years of age, had a carcinoma infiltrating almost the entire bladder except the trigonum. He removed the bladder with the exception of the trigonum, plugged the empty hollow space and sewed the peritoneum in with the upper margin of the abdominal incision. Fifty-two days after the operation the patient was able to micturate once every three hours and to empty the new bladder completely. Ten months after the operation he had completely recovered. In the second patient, 44 years of age, who had been operated on twice before for multiple papillomata, Nicolich performed the same operation. This patient recovered also. After twenty-two days the wound was closed and the patient had a normal micturition once every four or five hours.

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CLAUDE BERNARD — A RETROSPECT

Within this month occurred one hundred years ago the birth of one of those striking geniuses who have helped to place modern medicine on that firm foundation of experimental truth on which it now rests. Claude Bernard, who was born in France, July 12, 1813, and died in 1878, not only overshadowed all of his contemporaries in the field of physiology by the brilliancy of his achievements, but also left a record of accomplishments which have had a lasting influence on the development of the medical sciences. In many lines the investigator of to-day is still treading the paths opened by Bernard in the fruitful days of the middle of the century lately closed.

This is not the place in which to recount the condition of physiology and allied studies at the time when Bernard entered the scene. Vitalism and unfounded speculation, long reigning supreme, were beginning to give way to the force of the positive experiment. Morphologic conceptions, fostered by the preponderantly anatomic training of the earlier period, dominated the points of view and directed the energies of the devotees of research. The era of the modern laboratory had just begun and Bernard found an effective teacher in the physiologist Magendie. The pupil became a fitting successor to a competent master; indeed, Bernard went beyond Magendie and eclipsed him. Precisely wherein the two differed is clearly brought out by a biographer: "While recognizing, as clearly as did his master, the value of experiment as the final test of all physiologic views, he (Bernard), on the one hand, deposed experiment from its false throne, making it the servant and not the master of reasoned speculations; and, on the other hand, as we shall see, extended its domains, showing how, under proper use, it could be applied without distinction to all the phenomena of life."

The retrospect which this centennial anniversary awakens calls to mind first of all Bernard's greatest individual achievement, the discovery of glycogen in 1857. The story of the unraveling of the glycogenic function of the liver is an interesting illustration of the method of study which the French physiologist pursued with such remarkable success. Early in his career he set himself the task of following the fate of the foodstuffs in the organism, and particularly the physiologic history of the carbohydrates. Pathologic applications were never lost sight of and he early satisfied himself that the essence of diabetes was an excess of sugar in the blood. Bernard accordingly conceived the idea that there must be some organ in the body designed to consume the sugar in health and he set about to discover it. He fed a dog a mixture containing large quantities of starch and sugar and attempted to follow the carbohydrate as it left the intestine and passed in the blood through the various organs. The blood of the portal vein was found to contain sugar. The substance of the liver and the blood of the hepatic vein likewise contained sugar. As a counterexperiment he examined the blood and liver in a dog that had been fed exclusively on meat. No sugar was found in the portal blood, but it existed in abundance in the liver and blood of the hepatic vein. From these facts he drew the conclusion that "the liver is an organ which produces sugar." "I believe," he wrote in 1853, "that animal physiology is hereby enriched by a new function, *the secretion of sugar.*" The logical consequences of these observations were duly followed up and led to the discovery of glycogen, the antecedent of the hepatic sugar. The perfection of detail with which the problem of animal glycogenesis was worked up is almost unparalleled. Pioneers in science have often laid the foundations on which others have built. In the case of glycogen Bernard "not only laid the very first stone, but left a house so nearly finished that other men have been able to add but little."

Half a century after this great achievement of Bernard we scarcely realize its importance. Glycogen has become a familiar word in physiology and medicine; glycogenesis and glycogenolysis are familiarly drawn into consideration in the most prominent chapters of the physiology and pathology of nutrition. We little appreciate, furthermore, what it meant to demonstrate that synthetic capacities are not solely the characteristic of plant forms—that the animal economy likewise can manufacture and store its "animal starch," glycogen, in analogy with the behavior of the vegetable cells. The regulatory interference of the nervous system—a theme always uppermost in his mind—was taken by Bernard to mark a specific distinction between the two related phenomena. Again, the liver no longer remained merely an organ for producing bile; it acquired a new dignity of function that demanded careful investigation. New paths of inquiry had been trod with conspicuous success.

Later came another achievement which aided materially the understanding of the changes going on in the body and which ranks second in importance only to the brilliant researches on glycogen. Bernard discovered the vasomotor system and in many respects furnished the starting point for our present knowledge of the functions of the sympathetic nervous system. "It is almost impossible," Sir Michael Foster wrote, "to exaggerate the importance of these labors of Bernard on the vasomotor nerves, since it is almost impossible to exaggerate the influence which our knowledge of the vasomotor system, springing as it does from Bernard's researches as from its fount and origin, has exerted, is exerting and in widening measure will continue to exert, on all our physiologic and pathologic conceptions, on medical practice and on the conduct of human life. There is hardly a physiologic discussion of any width in which we do not sooner or later come on vasomotor questions."

There are few subjects connected with vegetative physiology which do not bear some impress of the labors of Claude Bernard. An adequate analysis of them would require a systematic treatise. We may recall in passing his studies on the functions of the pancreas. Bernard was the first to obtain pure, normal pancreatic juice; on his experience with it the edifice of our knowledge of its digestive function is built. In the present era, striking contemporary researches like those of Pawlow, with which we are more familiar, have been allowed to overshadow the brilliant pioneer experiments of Bernard.

What student in the laboratory is not acquainted with the remarkable properties of curare, the Indian arrow poison, with its unique paralytic manifestations on the end apparatus of the motor nerves? We must be brought to realize that the classic experiments of Bernard with this important toxicologic agent brought out the mutual independence of muscular and nervous irritability. Many a research has depended for its successful completion on the abolition of the reflexes by the administration of curare. Another substance, carbon monoxid, not infrequently of moment to the physician, was made to reveal its peculiar behavior toward the organism. "I was led," says Bernard, "to find that this gas rapidly poisons animals, because it instantly displaces the oxygen of the red corpuscles and cannot itself be displaced by oxygen."

Seventeen octavo volumes of "lessons" exhibiting an unusual originality summarize the best of what Bernard contributed to science. His conception of the task of the physiologist was to institute a profound analysis, by physical and chemical means, of the phenomena of living bodies. Systems and doctrines derived no sympathy from this clear-thinking Frenchman. "The prudent and reasonable course," he remarks, "is to explain all that part of disease which can be explained by physiology, and to leave that which we cannot so explain to be explained by the future progress of biologic science." In one of the most charming of modern medical biographic sketches Sir Michael Foster[1] has pointed out that Bernard identified "experimental medicine" with physiology. To him the phenomena of the living body presented the same fundamental features and had to be studied by the same canons of inquiry, whether the body in which they appeared were called sick or called sound.

By example and precept Claude Bernard exercised an unquestionable influence on both teaching and research in this country. But to-day we pause rather to pay a modest tribute to the memory of that exceptional man whose distinguished labors have brought forth more fruit and done more for humanity than have most workers in the field of medicine.

THE SERUM TREATMENT OF EPIDEMIC MENINGITIS

The director of the Rockefeller Institute for Medical Research, which was engaged for several years in preparing and distributing serum for use in the management of epidemic meningitis, has issued a final report[1] on the value of the treatment, now that the institute no longer prepares antimeningitis serum or collects histories of cases treated with it. *In any study of this sort reliable mortality statistics are of the utmost importance in permitting deductions regarding the efficacy of the measures introduced. Enough data are available from the epidemic of meningitis which prevailed in the United* States and Canada in 1904-1909 and in southwestern states in the winters of 1911-1913 to place the record of fatalities at an average figure well above 70 per cent. for the different communities involved. These figures are duplicated by the statistical information available regarding the epidemics in foreign countries.

The serum treatment was developed during the pandemic beginning in 1904, to which the high mortality figures given particularly apply. As a result the treatment underwent a singularly rigorous test for its usefulness, since the sporadic cases of meningococcus meningitis tend to be far less fatal than the epidemic disease. The analysis of the results in 1,300 cases actually treated with serum supplied by the Rockefeller Institute and studied in Flexner's report must be a source of permanent satisfaction to American medicine. It shows indubitably that the mortality of epidemic meningitis can be greatly reduced by the application of the specific serum treatment. In view of the fact that the average mortality during the pandemic was approximately 70 per cent., the gross reduction in the serum-treated cases was somewhat less than two-thirds, that is, to about 30 per cent. The extent of reduction is determined by two factors: the ages of the persons affected and the period of the disease at which the subdural injections of the serum are begun. It further appears that fulminant cases of epidemic meningitis are not wholly without the sphere of beneficial influence of the serum.

Now that the initial difficulties of administering the serum by direct subdural injections have largely been mastered, and that the serum is being successfully applied in private as well as in hospital practice, there will *doubtless* be still further reduction of the mortality, since early injection plays such a large part in determining the results achieved. It is with a sense of national pride as well as personal congratulations to the institute and the staff which have made possible these everlasting achievements and beneficent procedures that we reprint the conclusions published in the report of the first serum-treated cases. What Flexner wrote in 1909 is abundantly substantiated by even more rigorous subsequent trials. "The antimeningitis serum, when used by the subdural method of injection, in suitable dose and at proper intervals, is capable of reducing the period of illness; of preventing, in large measure, the chronic lesions and types of the infection; of bringing about complete restoration of health in all but a very small number of the recovered, thus lessening the serious, deforming and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease."

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[1] Foster, Sir Michael: Claude Bernard, Longmans, Green and Co., New York, 1899.

[1] Flexner, S.: The Results of the Serum Treatment in 1,300 Cases of Epidemic Meningitis, Jour. Exper. Med., 1912, xvii, 553

INTERRELATION OF ALKALIES AND LIME SALTS IN NUTRITION

In continuation of the comments recently made in THE JOURNAL on the demands and functions of lime in the dietary[1] it may not be amiss to point out certain interrelations between the various types of inorganic food ingredients that are likely to be of distinct physiologic moment in certain conditions. The alkali salts and the alkali earth salts exhibit properties which render them chemically unlike and may account for a decidedly unlike behavior in the body. The salts of sodium and potassium are readily soluble and thus are easily and speedily transported in the fluids of the organism. Gains or losses of these salts can accordingly be accomplished with readiness. The alkali earth salts, notably those of calcium, tend to be less soluble and therefore require special conditions for their mobilization in the organism. The results of administration or withdrawal of lime are likely to betray themselves only slowly in comparison with other inorganic compounds. Hence the subtle effects which may be involved. Furthermore, the balance of calcium appears to be dependent in no small degree on the simultaneous presence or absence of other factors not yet readily recognized. Excessive administration of other foodstuffs may lead to intestinal losses of calcium. The formation of calcium soaps in the stools of infants is a striking example of the indirect effect of abnormal fat utilization on the availability of lime in the alimentary tract. Excess of carbon dioxid is sufficient to promote the transport of the insoluble phosphate of lime.

The foregoing statements are illustrations of mechanisms whereby calcium is withdrawn from participation in the body's needs. A marked instance of a favorable influence in the direction of conservation rather than loss of lime in the organism is shown in the results of alkali administration. Dubois and Stolte[2] have reported unmistakable gains in the retention of calcium in infants when foods yielding an excess of alkali or its equivalent in carbonates of sodium and potassium were added to the usual dietary. Whatever the reason for this, whether it be that the added alkalies prevent the formation of insoluble lime soaps, or enable the organism better to neutralize the acids which are formed in intermediary metabolism from the combustion of the sulphur and phosphorus of ingested proteins, the fact appears plain that the exhibition of alkalies tends to protect the calcium deposits of the organism and leads indirectly to calcium retention.

Perhaps the unique value ascribed now and then to certain cereal or malt foods used as adjuvants in infant feeding lies quite as much in the character of the inorganic components, such as the alkalies, which they contribute, as in their quota of the true energy-yielding nutrients. In harmony with this, at any rate, is the reported superiority of malt extracts over maltose in respect to the conservation of calcium in the growing child.

RECENT ANTIVIVISECTION ACTIVITY

Repeated attempts of antivivisection societies to secure legislation in this country restricting medical research have uniformly failed. Now the agitators, by use of various publicity methods, have turned their energies toward rousing popular prejudice. Recently several prominent members of the faculty of the University of Pennsylvania have been arrested on charges preferred by members of the American Antivivisection Society, and are at present awaiting trial. The prominence of the university in which animals are alleged to have been cruelly treated, and the detailed description of the alleged treatment, have led to wide-spread notice of the case in the daily press. Unfortunately only one side is now presented, and consequently in not a few papers the assumption is made that the charges against the investigators are true.

The reputation of the antivivisectionists for veracity is not high. After an exceptionally thorough inquiry into all the charges brought against the laboratory workers in Great Britain—an inquiry lasting five years—the Royal Commission on Vivisection last year discredited practically all the charges, and declared that the harrowing descriptions by the antivivisectionists and their illustrations of operations on animals were in many cases calculated to mislead the public. Last spring Miss Lind-af-Hageby, the noted antivivisectionist writer and editor, brought action for libel against Dr. C. W. Saleeby and the editor of the *Pall Mall Gazette* for publishing statements implying, as she asserted, that she was "a deliberate and systematic liar and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood." Although the statements were not in fact so plain-spoken, the defense offered was that the statements were true. After a careful trial lasting sixteen days, the special jury, on only twenty minutes' deliberation, brought in a verdict for the defendants. Miss Lind-af-Hageby is liable for the costs of the trial, which were estimated at about $25,000.

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[1] Lime in the Dietary, editorial, THE JOURNAL A. M. A., July 19, 1913, p. 200.

[2] Dubois, M., and Stolte, K.: Abhängigkeit der Kalkbilanz von der Alkalizufuhr, Jahrb. f. Kinderh., 1913, lxxvii, 21.

Since the agitators against animal experimentation seem not disposed to be scrupulously exact in their contentions, it will be well to suspend judgment in the Philadelphia cases until the evidence is presented on both sides.

METABOLISM IN NON-INFECTIOUS FEVERS

There is unanimity in respect to the fact of increased metabolism in fevers. In ordinary cases the loss of energy incidental thereto involves both the protein and the other constituents of the body. Attention has long been focused on the exaggerated protein destruction, in particular, which is so frequently noted. In fact, two of the most conspicuous symptoms of fevers are the high temperature of the body and the increased metabolism. Whether the pyrexia itself is sufficient to account for all of these phenomena, or whether the heightened destruction of body protein is associated with special toxins produced by the infective agent, has been somewhat debated. There is no doubt that some increase in metabolism can be effected by mere overheating of the body by methods in which no toxic factors such as are produced by micro-organisms are involved. The undue breaking down of proteins produced by the temperature effect alone can be checked in large measure by the ingestion of the protein-sparing carbohydrates. If we read aright the more recent contributions to the subject of nutrition in fever, it would now appear as if the toxin effects likewise are not specifically directed at the proteins. It happens as a rule that fever patients are not possessed of any considerable store of energy-yielding reserves. The disease is attended with diminished appetite. When all of these factors are put together they result in a condition of nutrition in which the food intake and body deposits are not adequate to meet the calorific needs without some heightened destruction of protein. That this loss is not inevitable and that a large ingestion of protein to meet fever conditions is not necessary is well shown by the work of Shaffer and Coleman and others who have maintained a high intake of carbohydrate and fat in suitable patients, and thereby averted the familiar losses of protein induced by the heightened catabolism in fever.

One reason for the difficulty of distinguishing between what is directly attributable to micro-organisms or their toxic products and what to the altered temperature environment of the body cells is readily discovered. In the ordinary infectious fevers there are several influences at work and it is not easy to differentiate the rôle of each. If it were convenient to investigate metabolism in so-called aseptic fevers—if it were possible to induce typical fever independently of harmful biologic agencies which themselves thrive in the organism of their host and produce complex changes—the problem would be simplified. For this purpose animals have been subjected to hot, moist atmospheres. A rise in temperature occurs along with other febrile responses, but the conditions for inducing them are highly unphysiologic.

Other methods of initiating non-infectious fevers have been sought. The latest illustration is furnished by the action of aloin. Subcutaneous injections of this drug are attended with typical febrile increase in body temperature accompanied by a pronounced augmentation of metabolism.[1] At the height of the fever the figures may reach an amount double that associated with the same individual under normal conditions. The point of foremost interest, however, is the fact that the sources of the energy metabolized are dependent on the nutritive condition of the subject. In starving animals it is fat and protein that are drawn on; but when there is an abundance of carbohydrate in the diet, this foodstuff is promptly requisitioned to meet the febrile demands.

These findings, along with the reports that have come from the more recent study of fever in man, make it reasonably probable that if protein is destroyed in undue amounts in febrile disease it is not primarily because of any specific attack on the nitrogenous components of the body, but rather because the nutritive conditions leave no alternative. Diet, therefore, must be given most serious consideration in fever. The starvation practices of the past cannot be tolerated except when alimentation is absolutely precluded owing to attending complications. The value of easily digestible carbohydrates in particular has been underestimated. We are reminded of the comment of Graham Lusk: "It seems strange that in this country, where so much attention has been paid to the modification of infant food, the preparation of suitable diet in fever should have received such scant attention."

THE BLOOD PHENOMENA OF ALTITUDE

The arrival of the summer months, marking the return of the season of mountain climbing, revives the old problems of the physiology of higher altitudes. We are reminded anew of questions that are of perennial interest, some of which are apparently little nearer their permanent solution than they were a decade or even a generation ago. Foremost among them is the relation of altitude to the circulation, particularly to the number of red blood-cells and their hemoglobin content. In 1882 Paul Bert observed that the blood of animals from La Paz in Mexico, at an altitude of 3,700 meters (12,140 feet), had an oxygen-carrying capacity far in excess of that exhibited by the animals on the lower plains. An explanation of this was forthcoming when, in 1890, Viault found that at the height of 4,392 meters (14,410 feet) in Peru, his blood exhibited from

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[1] Berrár, M.: Die Wirkung des Aloins auf den Stoffwechsel, Biochem. Ztschr., 1913, xlix 426.

7 to 8 millions of red corpuscles per cubic millimeter instead of the customary 5 millions. The same facts have since been observed over and over again. But how are they to be interpreted? Are we confronted, in this interesting finding at higher altitudes and their accompanying rarefied atmospheres, with an actual new formation of corpuscles? If so, this is a unique illustration of the adaptive response of the organism to the necessities imposed by the diminished oxygen tension. This interpretation of the blood phenomena of altitude proposed by its earliest investigators has been assailed from time to time by subsequent students of the subject. The objections interposed are themselves of interest because they suggest still other features of the effect of rarefied atmospheres and also modify our views as to the therapeutic possibilities of residence at higher altitudes. Thus it has been maintained that the greater dryness of the air in these environments, together with increased muscular activity, enhances the loss of water from the body through the respiratory tract in particular, and thereby leads to a concentration of the blood. The corpuscular elements will accordingly exhibit an apparent increase in number in a given volume of blood without any real increase in the absolute numbers present in the entire organism. Zuntz and his pupils have emphasized the possibility of an altered distribution of the corpuscles in different vascular areas, leading to a so-called vasomotor displacement of the cellular blood-elements whereby they become more concentrated in those peripheral regions from which specimens for examination are conventionally taken. Abderhalden has analyzed the entire bodies of animals maintained at high altitudes, and failing to find any pronounced increase in hemoglobin, he explains the undoubted augmentation observed in blood-samples by a concentration of the blood through exudation of plasma into the lymph-spaces. It has further been suggested that the red corpuscles may be conserved better at high altitudes and thus a comparative increase result from the failure of normal destruction. Finally, errors in the technic of blood measurements, etc., due to the diminished pressure at altitudes, have repeatedly been propounded.

It is unnecessary to review the arguments pro and con which have revolved about these contentions. None of them suffices, in our judgment, to exclude entirely the possibility of increased hemopoiesis and the production of blood-cells *de novo* under the stimulus of altitude. The prevailing uncertainty makes welcome any new evidence or critical estimate of what happens at higher altitudes; doubly so when it furnishes some basis for judgment regarding procedures applicable in climatotherapy. Professor Cohnheim and Dr. Weber[1] have now reported the results of an examination of the blood of twenty-three persons who have been engaged for long periods in the operations of the railway ascending the Jungfrau peak in the Alps. Most of them spent considerable portions of their time at altitudes from 2,300 meters (7,546 feet, Eigergletscher Station) upward to 3,450 meters (11,319 feet, Jungfraujoch Station). The importance of these observations lies in the fact that they furnish data regarding persons who have had prolonged experience in the higher altitudes so that the incidents of temporary residence and change of scene may be regarded as equalized or eliminated. They supplement the earlier records from the South American plateaus by results obtained with approved and up-to-date procedures. The new statistics agree in exhibiting values both for red blood-corpuscles and hemoglobin distinctly higher than the "normals" of sea level. Cohnheim maintains that the high figures thus obtained on a large scale from subjects accustomed to live at high atmospheric levels leave no alternative except to assume a new formation of corpuscles under such conditions. Where contrary conclusions have been reached—and there are many such—it is not unlikely that the period of residence was too brief to permit the stimulating effects of altitude to manifest themselves in any conspicuous way.[2]

The renewed assumption of an increased functioning of the hemopoietic organs at high altitudes has further been supported by observations conducted on Monte Rosa in the Alps relating to the regeneration of blood after severe anemias. In the international laboratory built on the Col d'Olen at an altitude of 2,900 meters (9,515 feet) and dedicated to the memory of Angelo Mosso, Laquer[3] has found that dogs deprived by hemorrhage of half their blood-supply regenerate it in about sixteen days. Under precisely comparable experimental conditions twenty-seven days are required at lower levels for the restoration of the same blood loss. Laquer believes that the lower partial pressure of the oxygen is the effective stimulating factor in this more pronounced regeneration so strikingly shown at great heights. How long this latest explanation will withstand the attacks of the increasing number of Alpine physiologists remains to be seen.

Current Comment

CHIROPRACTIC—A JUDGE'S OPINION

Chiropractic is a freak offshoot from osteopathy. Disease, say the chiropractors, is due to pressure on the spinal nerves; ergo it can be cured by "adjusting" the spinal column. It is the sheerest quackery, and those who profess to teach it make their appeal to the cupidity of the ignorant. Its practice is in no sense a profession but a trade—and a trade that is potent for great harm. It is carried on almost exclusively by those of no education, ignorant of anatomy, ignorant even of the fundamental sciences on which the treatment of disease depends. A chiropractor of Canton, Ohio, was recently fined $200 and costs and sentenced to sixty days in the workhouse for practicing medicine without a license. In imposing sentence, Judge Krichbaum, before whom the case was tried, said in part:

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[1] Cohnheim, O., and Weber: Die Blutbildung im Hochgebirge, Deutsch. Arch. f. klin. Med., 1913, cx, 225.

[2] Those interested in the literature of this subject may consult a detailed review by Cohnheim, O.: Physiologie des Alpinismus, Ergebn. d. Physiol., 1903, ii (1), 612; 1912, xii, 620.

[3] Laquer, F.: Höhenklima und Blutneubildung, Deutsch. Arch. f. klin. Med., 1913, cx, 189.

> "There is unfortunately growing up in this country of ours a general defiance of the law. In the opinion of the court, you and the school to which you belong are in this class. This court does not take much stock in the claims you make that you were not practicing medicine. It is not within the province, nor the purpose of the court to criticize the class of school to which you belong, nor the efficiency of your treatment. . . . You claim to be a doctor of chiropractic; the technical meaning of the word 'doctor' is a person, learned, well-taught, well-informed, and universally a doctor is recognized as being able to alleviate physical suffering. For a long time there has been running in the magazines an advertisement: 'Be a Doctor of Chiropractic, the new Drugless Healing Science of Spinal Adjustment; *a common school education is all you need to begin;* our simplified training does the rest.' Men who believe in education, who glory in our school system, in our colleges, are staggered at this audaciousness. Certainly to conform to the requirements in the practice of medicine in the State of Ohio, could only make you more efficient, more capable for the practice of your profession. . . . The logical results of permitting you to practice medicine without a certificate from the state board would be to lower the standards of schoolteachers, of druggists, of physicians and every other class necessary to maintain an orderly regime of civilization, and wholesome living—in short, to open the doors for all charlatans to prey on the suffering. There is a growing tendency to raise all intellectual standards. The execution of this law rigorously will be a step in this direction."

Canton is to be congratulated on having a jurist with as broad a grasp of fundamentals as that shown by Judge Krichbaum.

HEAT-EXHAUSTION AND SUNSTROKE

At this season the differentiation between heat-exhaustion and sunstroke is most important since the treatment differs radically and a mistake might be serious. To ice the body of a heat-exhaustion patient would almost assure a fatal issue, while, on the other hand, no one would be likely to give a sunstroke victim a hot bath. Heat-exhaustion comes from continual exposure to high temperatures while at hard and exhausting labor. A cool and clammy skin, probably subnormal temperature, and small and rapid pulse are characteristic; the end of a hot wave is likely to bring many such cases. Ammonia, strychnin, rest and a bath at least tepid are indicated, alcohol being avoided. Sunstroke, heatstroke or thermic fever comes from exposure to the sun or to intense heat, especially in one predisposed by fatigue, indigestion, previous illness or alcoholism or excesses such as are stupidly indulged in during hot weather. Those who have once suffered thermic fever are especially prone to recurrence. The victim may fall unconscious and die at once or after a few hours of coma, dyspnea and heart weakness. In other cases perspiration ceases, and there are headache, dizziness, nausea, indistinct vision, flushed face, dry and hot skin, and muscular relaxation. In addition to these symptoms there may be spasms or convulsions, very high temperature perhaps to the thermometer's limit, frequent and full pulse, deep or stertorous respirations, and unconsciousness deepening to coma (with Cheyne-Stokes breathing in fatal cases). Here the treatment is cold sponging or bathing in ice-water, enemas of ice-water, ice frictions and the ice-cap. Venesection in some cases may be a life-saving measure, and should not be forgotten.

PROPERTY VERSUS LIFE

To the legal mind, apparently, the rights of property have always seemed of more importance than human life. For hundreds of years it was possible for a man brutally to maltreat his child with less legal risk than if he had poached a hare. Gradually human life became more valuable; but even to-day it fails to receive the protection that is accorded to property. It is no uncommon thing to find reported in British newspapers cases in which a drunken navvy has kicked and otherwise abused his wife, to receive no greater punishment at the hands of the law than a paltry fine; while the unhappy wight who, driven by hunger, steals a loaf, is sent to prison. Nor do we need to go oversea to find such instances of the worship of property. An excellent illustration of the workings of the legal mind in problems of this kind is to be found in a study of ten Notices of Judgment[1] issued by the United States Department of Agriculture and giving in detail the account of ten violations of the Food and Drugs Act. These ten cases deal with charges brought against the firm of Hawley and Hoops, New York, who are in the candy business. Hawley and Hoops sell what is known as "penny goods"; that is, the kind of candy purchased by the little tot who has been given a penny to spend. Ten different specimens of Hawley and Hoops' penny goods were seized by the officials of the Bureau of Chemistry and analyzed. All of them were found to be adulterated with arsenic and most of them contained shellac. All of them were being sold as chocolate candies yet the officers reported that some did not even have the predominating flavor of chocolate. In every case the firm *pleaded guilty*. In nine out of the ten cases no penalty was imposed, the court suspending judgment. In the tenth case a fine of $50 was imposed. The case in which a fine was imposed was the one, and the only one in which the company had not merely sold a poisonous product to little children but had misstated the net weight of the package in which the arsenic-containing candies *came!* Selling to little children as chocolate candies a mixture containing arsenic and shellac but not containing even the predominating flavor of chocolate is, apparently, in the eyes of the law, a trivial offense. But selling to a dealer a package marked five pounds that really contained only four pounds fourteen and five-eighths ounces, that is a crime!

HARVARD MAKING A STUDY OF TROPICAL DISEASES

Harvard University has undertaken an important work in establishing a school of tropical medicine, the course of which is planned to extend over a period of six months. This school has been placed under the charge of Dr. Richard P. Strong, who with two other instructors in the new school, Drs. E. E. Tyzzer and C. T. Brues, is now in Peru, South America, making a special study of the protozoa. We are advised by a cablegram that several important discoveries have already been made. It is reported that the cause of Oroya fever is a protozoon and that this disease is distinct from verruca peruviana, whereas formerly it has been looked on as an initial febrile stage of the latter disease. The parasite appears to belong to the genus *Theileria,* and this is the first time the genus *Theileria* has been reported as pathogenic for man. Verruca peruviana, on the other hand, is reported as due to a virus with which the members of the expedition have succeeded in inoculating animals and thereby reproducing definite lesions of the disease. According to the cablegram, therefore, the members of the expedition have established a differentiation between Oroya fever and verruca peruviana, a matter of great importance. It is evident also that much has been added to the known facts regarding the etiology and the transmission of the diseases which, in turn, should lead to improved methods for their prevention and treatment. The researches of this new department of Harvard University will be watched with much interest.

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[1] Notices of Judgment, Nos. 2353 to 2362 inclusive.

JUSTICE

S. H. Clark and C. H. Crockard of Bismarck, North Dakota, edit and publish *Jim Jam Jems,* a sheet that has printed not only obscene and indecent matter but also personal attacks on numerous individuals and organizations, including the American Medical Association and some of its officers and members. To the interests it represents it has given value received. The publication has not been distributed through the mails, having, as we understand, been debarred from the use of the United States postal service; the express companies have been utilized instead. It may interest our readers to know that the editor and publisher have recently been found guilty of sending obscene matter in interstate commerce. Each has been sentenced by a United States judge to four years' imprisonment in the federal penitentiary and to pay a fine of $2,000 and half the costs of the prosecution. Incidentally, the daily press has within the past few days reported the conviction of a newsdealer for handling this obscene sheet. The papers state that this is the first of a number of suits the government has started against other newsdealers.

Medical News

CALIFORNIA

Hospital Opened.—The first ward of the Methodist Social Service Hospital, Los Angeles, was officially opened July 11.

Hospitals Organize.—The Association of California Hospitals was organized in Los Angeles July 9. The members of the board include Drs. Walter M. Lindley, R. L. Byron, H. P. Barton, O. C. Welbourn and W. M. Lewis, Los Angeles; R. Brown, San Francisco; D. Gochenaur, San Diego; F. C. E. Mattison, Pasadena; J. W. Ward, San Francisco, and F. K. Ainsworth, San Francisco.

Personal.—Dr. F. C. Shurtleff, Los Angeles, was presented with a gold special police shield by the policemen of University Station in appreciation of service rendered to the late Police Captain Bradish.——Dr. A. B. Royal, formerly of Pasadena, who escaped from the Sierra Madra Sanatorium, was found in a canyon, July 11, and returned to the sanatorium.——Drs. M. F. Clark and A. S. Tuchler, San Francisco, arrested in connection with the death of Miss Etta Clark, have been released, the autopsy showing that a criminal operation had been performed on the young woman before these physicians were called into the case.——Dr. N. Rosencranz has been appointed city physician of San Francisco.

COLORADO

Babies' Health Contest Association Incorporated.—The Colorado Babies' Health Contest Association has been incorporated at Denver with Dr. Mary Elizabeth Bates as president. The association will hold annual exhibts at various towns in the state.

Personal.—Dr. William H. Sharpley, formerly health commissioner of Denver, has been appointed superintendent of the Denver County Hospital to succeed Dr. Rose Kidd Beere.——Dr. Charles Jaeger has been appointed coroner of Denver County.

CONNECTICUT

Personal.—Dr. William R. Hanrahan, Bristol, was thrown from his carriage, July 13, fracturing his right arm.——Dr. Gabriel U. Jackowitz, New Haven, was severely burned by the back-firing of the engine of his automobile.

Dies from X-Ray Exposure.—Burton E. Baker, an expert in the use of the x-ray and inventor of the x-ray tube, died at his home in Connecticut, July 10, from the effects of exposure to the x-ray, after an illness of nearly a year.

Hospital Notes.—The Babies' Hospital, Hartford, has opened for the season under the charge of Drs. Robert Starr, H. F. Flaherty, W. G. Murphy and C. B. Brainard, with a staff of about fifteen nurses.——Incorporation papers of the Physicians' and Surgeons' Hospital, New Haven, with a capital stock of $250,000, have been filed with the secretary of state. A site has been secured on Humphrey Street near Orange, and it is contemplated to erect a four-story building as a general hospital. The building will contain two general wards, four semiprivate wards and about forty private rooms. Among the incorporators appears the names of Drs. Leonard Bacon, Nelson A. Ludington, M. J. Adams and Clarence E. Skinner.——Two new ward buildings to accommodate one hundred patients and three other buildings have been authorized by the legislature to be erected at the Norwich Hospital for the Insane.

IDAHO

New Secretary for State Board.—Dr. J. F. Schmershall, Jerome, has been elected secretary-treasurer of the Idaho State Board of Medical Examiners, vice Dr. O. J. Allen, Bellevue, term expired.

ILLINOIS

State Hospital Soon to be Built.—The president of the Illinois Board of Administration states that as soon as the topographical survey of the land secured for the Alton State Hospital has been completed, plans will be prepared and contracts awarded, and that the construction work will commence without delay.

Personal.—Dr. J. D. Dickinson, Galva, who was operated on in Galesburg, recently, is reported to be convalescent.——Dr. Clara Harrison Towne, Lincoln, director of psychology in the State School and Colony, has started for Europe.——Dr. Sandor Horwitz, Peoria, was injured in a collision between his automobile and a street car, July 16.——Dr. Mather Pfeiffenberger, Alton, has gone to Europe.——Dr. T. J. Foster, Centralia, has returned from Europe.——Dr. John F. Taylor, Buda, was seriously injured in an automobile accident near Coal Creek, July 14.

Chicago

Off for Europe.—Dr. and Mrs. Alexander F. Stevenson, Dr. and Mrs. John B. Murphy and Dr. Julius H. Hess, have sailed for Europe.

Personal.—Dr. John H. Long, professor of chemistry in Northwestern Medical School, has been appointed dean of pharmacy of Northwestern University.——Captain John S. Nagel, M. C., Ill. N. G., assigned Second Infantry, while on duty at Camp Lincoln, Springfield, was thrown from his horse, fracturing his right leg above the ankle.——Dr. James W. Jobling, director of the Nelson Morris Research Laboratory at the Michael Reese Hospital, is said to have resigned to become a staff chief of the laboratory of the Columbia University, New York City.——The degree of D.Sc. was conferred on Dr. Ludvig Hektoen of the University of Chicago by the Univer [illegible] recent convocation exercises.——The [illegible] has conferred the honorary degree of [illegible] DeWitt of the Otho S. A. Sprague Memorial Institute.

INDIANA

Personal.—Dr. T. C. Kennedy, Indianapolis, who has been seriously ill with nervous prostration, is reported to be convalescent.——Drs. J. H. Oliver, W. F. Clevenger, David Ross, Hugo Pantzer and J. F. Barnhill, Indianapolis, have gone abroad.——Dr. Oliver P. Graham, Jeffersonville, who has been seriously ill with pneumonia, has gone to Mackinaw Island, Mich., to recuperate.

Hospital News.—The commissioners of Marion County have decided to erect a county tuberculosis sanatorium near Juliette.——A hospital will be opened at Sullivan August 1, by Drs. G. D. Scott and Joseph R. Crowder.——Plans have been made for the erection of the Marion County Detention Hospital for the Insane, Indianapolis.——The cornerstone of the new St. Francis Hospital, Beech Grove, was laid with impressive ceremonies July 16.

IOWA

Work Ends at Drake Dispensary.—The free dispensary connected with Drake University College of Medicine, Des Moines, was conducted for the last time May 31. The work of the dispensary is being continued by the Iowa Methodist Hospital.

Personal.—Dr. Paul Van Metre, Atkins, has been appointed superintendent of the Svart Memorial Hospital at Nakawn Sri Tamarat on the southern coast of Siam and will sail from San Francisco October 1.——Dr. A. L. Wright, Carroll, has started for Europe.——Dr. Raymond C. Coleman, Iowa City, has started for Germany.

LOUISIANA

The Health Train.—The Louisiana Health Exhibit Train with a staff of eight lecturers and demonstrators headed by Dr. Oscar Dowling, left Shreveport July 14 for a tour of the St. Louis Southwestern Railroad.——Dr. Dowling has received a request for use of the train for a tour of Alabama in September.

Reorganization of Tulane.—The president of Tulane University has announced the permanent reorganization of the medical department. The department will hereafter be known as the Tulane College of Medicine and will be divided into four schools, each with a separate dean and staff, namely: the School of Medicine and Pharmacy, dean Dr. Isadore Dyer; the Post-Graduate School, dean, Dr. Charles Chassaignac; the School of Hygiene and Tropical Medicine, dean, Dr. Creighton Wellman, and Dentistry, dean, Dr. Andrew Friedrichs. The following elections, transfers and changes in the Post-Gradute School of the University: Dr. Henry Dickson Bruns, transferred from the emeritus to the active list, as professor of diseases of the eye; Dean Creighton Wellman, elected professor of tropical diseases and preventive medicine; Dr. J. T. Halsey, elected professor of clinical therapeutics; Dr. C. C. Bass, elected professor of clinical microscopy; Dr. W. W. Butterworth, elected professor of diseases of children; Dr. George S. Bel, elected professor of internal medicine; Dr. L. R DeBuys, elected assistant professor of diseases of children; Dr. Allan Eustis, elected assistant professor in dietetics and nutrition; Dr. L. L. Cazenavette, elected instructor of diseases of the nervous system; Dr. Amedee Granger, elected demonstrator of radiology; Dr. Wallace J. Durel, elected instructor in tuberculosis; Dr. E. L. Leckert, elected assistant in clinical surgery; Dr. J. D. Martin, transferred from assistant in general surgery to assistant in diseases of the ear, nose and throat, and Dr. P. J. Kahle, elected assistant in surgery of the genito-urinary organs and rectum.

MARYLAND

Personal.—Dr. H. Arthur Mitchell, Elkton, has been appointed aid on the staff of General Gaither, N. G., Maryland.——Dr. Thomas B. McDonald, Cumberland, is reported to be ill with typhoid fever at his home.

Baltimore

Personal.—Drs. William H. Welch, Arthur D. Hirschfelder and Lewellys F. Barker have sailed for Europe.——Dr. Arthur D. Hirschfelder of Johns Hopkins University has accepted the appointment of professor of pharmacy and director of the pharmaceutical department of the University of Minnesota.——Dr. J. Morris Slemons, associate professor of obstetrics at Johns Hopkins Medical School, has been appointed head of the department of obstetrics and gynecology and director of the woman's clinic in the University of California, San Francisco.——Dr. Cherbonnier, 87 years of age, was elected an honorary member of the Baltimore County Medical Association, July 11.

MINNESOTA

Personal.—Dr. C. E. Dutton, Minneapolis, president of the Minnesota State Automobile Association, is accompanying the Glidden tour from Minneapolis to Glacier National Park as medical representative.——Dr. J. Clark Stewart, Minneapolis, is reported to be seriously ill with heart disease in St. Agnes' Hospital, Baltimore.——Dr. Ernest B. Hoag, school hygiene supervisor for the State Board of Health, has been engaged to continue his work in the Minneapolis schools as an employee of the State Department of Education and also to give lectures on school hygiene in the University.——Dr. W. J. Mayo, Rochester, sailed for England July 23.

MISSOURI

Personal.—Dr. George McNeil, Sedalia, underwent amputation of a finger, July 11, the result of x-ray burns.——Drs. J. Elliott Royer, H. H. Look and Gordon A. Beedle, Kansas City, have sailed for Europe.——Dr. George L. McCutchan, Lewis County, has been appointed physician at the State Penitentiary, Jefferson City.——Dr. George A. Still, Kirksville, has returned from Europe.——Dr. C. A. Revelle has been appointed police surgeon of Kansas City, vice Dr. Eugene Carbaugh, resigned.——Drs. R. T. Sloan, W. J. Frick and J. L. Robinson have resigned from the visiting staff of the Kansas City General Hospital and Drs. Ernest F. Robinson and M. A. Hanna have been appointed members of the staff.

St. Louis

Personal.—Dr. Elias Potter Lyon, dean of the University of St. Louis School of Medicine, has been made dean of the University of Minnesota College of Medicine and will take charge in September.——Dr. A. C. Henske has resigned as chief of the tuberculosis clinic to take up private practice and do research work for the St. Louis Society for the Relief and Prevention of Tuberculosis.

NEW JERSEY

New Officers.—Physicians' Auxiliary of the Millville Hospital, July 14: president, Dr. J. W. Wade; secretary-treasurer, Dr. James S. Knowles.

Personal.—Dr. Joseph Adler has been appointed city physician of Bayonne.——Dr. John T. Beckwith has been appointed chief of the board of pension examiners of Atlantic City.——Dr. F. H. Pierson, Elizabeth, charged with running down a boy with his automobile, was discharged, the officers who made the arrest saying that there were no grounds therefor.——Dr. Hugh M. Hart, surgeon of the fire department of Newark, who was operated on recently in the Presbyterian Hospital, is reported to be in a serious condition.

NEW YORK

New York City

Personal.—Among those who have recently sailed for Europe are Dr. Albert H. Fridenberg, Dr. Henry J. Wolf, Dr. E. S. Jackson, Dr. and Mrs. J. E. L. Davis, Dr. and Mrs. George M. Swift, Dr. and Mrs. T. C. Janeway, Dr. F. W. Baldwin, Dr. and Mrs. Lee M. Hurd, Dr. and Mrs. John J. McGrath, Dr. and Mrs. G. K. Swinburne, Dr. John A. Fordyce, Dr. and Mrs. Graham Lusk, Dr. Homer Swift and Dr. James S. Ames of Babylon, L. I.——Dr. and Mrs. P. E. Tiemann have returned from Europe.

Baby Welfare Work.—The last two weeks have scored another triumph for the Babies' Welfare workers. Despite the hot weather the records for the first two weeks in July show 72 fewer deaths than during the corresponding period of 1912. For the week ending July 12 there were 272 deaths in the Greater City compared with 309 for the corresponding week of 1912. The greatest reduction was in Brooklyn where there were 84 deaths for the week ending July 12, against 111 for the corresponding week of 1912. The enrolment at the milk [illegible] has more than doubled during the past year. It is specially noted that there has been a decrease in the number of deaths from congenital causes this year.

Decalogue for Infantile Health.—The Brooklyn Civic League, which has been waging a campaign against the fly, has drawn up a set of commandments for babies' health, each command-ment being amplified and explained for the benefit of mothers. The commandments are as follows:

1. Do not give your baby impure milk.
2. Do not give your baby ice-water.
3. Keep the flies off the baby's food and do not give it anything to eat on which the flies have feasted, unless it is first boiled.
4. Do not dress the child too warmly.
5. Bathe your baby a few times a day.
6. Do not keep baby in the kitchen.
7. Do not allow your baby to lie directly in the sun.
8. Do not give your child any tea, coffee or alcoholic drinks.
9. Do not give your baby any pacifiers.
10. Do not give the child any soothing syrups.

NORTH CAROLINA

New Hospital for Asheville.—A movement is under way at Asheville to secure $100,000 for the building and equipment of a new Mission Hospital in that city.

Personal.—Dr. John A. Ferrell, for three years director in charge of the Rockefeller hookworm work in the state, having been selected as general manager of the entire work of the Rockefeller Foundation in the hookworm work, has resigned as assistant secretary for the Eradication of Hookworm for the State Board of Health and will move to Washington. Dr. Ferrell will continue to discharge his duties for the time being as secretary of the Medical Society of the State of North Carolina.——Dr. C. D. Hill has been appointed assistant superintendent of Watts Hospital, Durham.——Dr. W. S. Rankin, secretary of the State Board of Health, sailed for Panama July 9 on a two weeks' trip.

PENNSYLVANIA

Tuberculosis Camp in Carbon County.—Contracts for a modern tuberculosis camp and refuge for crippled children at Aquaschicola, Carbon County, to be erected for the Volunteers of America, will shortly be awarded. The camp will be built on a sixty-acre farm belonging to the Volunteers, on which there is now a temporary sanatorium managed by the organization. This farm is 1,200 feet above the sea level, is surrounded by a forest of fir trees and has a large stream flowing through one part. The camp, which will be modeled on the plan of the State Sanatorium at Mount Alto, will be constructed entirely of concrete; will comprise a central building, 75 by 100 feet, containing dining-room, reading-room, dispensary and quarters for the medical staff and nurses, surrounded by square and hexagonal bungalows. The square houses will be supplied with two beds each and the hexagonal with one. Accommodations for about seventy-five patients will be provided. In connection with the camp, a dispensary will be opened in Philadelphia for the radiographic treatment of patients in the incipient stages.

Philadelphia

Off for Europe.—Drs. S. MacCuen Smith, Ernest LaPlace, H. K. Pancoast, George E. Pfahler and Matthew Woods have sailed for Europe.

Personal.—Dr. C. J. Stamm, charged with negligence in the matter of a death certificate, was brought before a magistrate, July 14, and after investigation was exonerated and discharged.——Dr. R. H. Sylvester, assistant in the department of psychology in the University of Pennsylvania, is to establish a laboratory in the University of Iowa, Iowa City, for the study of delinquent children.

VIRGINIA

Anti-Malarial Association Incorporated.—The Virginia Society for the Study and Prevention of Malaria, with headquarters at Norfolk, has been incorporated, without capital stock.

Personal.—The residence of Dr. Job Holland, Suffolk, was burned, July 13.——Dr. Moses D. Hoge, Jr., has been reelected a member of the Richmond Board of Health.——Dr. S. S. Gale, Roanoke, has been elected president of the Surgeons' Club of Rochester, Minn.

WASHINGTON

Personal.—Dr. E. O. Houda, Centralia, has disposed of his interests in the Houda Private Hospital and will go abroad for a year.——Dr. and Mrs. J. W. Stevenson, Palouse, have gone to New York for the summer.

State Association Meeting.—The twenty-fourth annual meeting of the Washington State Medical Association was held in Everett, July 14-16, and the following officers were elected: president, Dr. C. J. Lynch, North Yakima; president-elect, Dr. C. W. Sharples, Seattle; vice-presidents, Drs. J. R. Brown, Tacoma, and Don Palmer, Seattle; secretary-treasurer, Dr. C. H. Thompson, Seattle (reelected), and trustees, Drs. W. N. Hunt, Burlington; L. M. Simms, Kalama; L. H. Redon, Seattle; J. R. Yocum, Tacoma; J. M. Semple, Medical Lake; S. E. Lambert, Spokane; C. N. Suttner, Walla Walla, and L. Ganson, Odessa. The 1914 meeting will be held in North Yakima and that for 1915 in Tacoma.

WISCONSIN

Babies' Pavilion Opened.—A babies' pavilion has been opened in Milwaukee near the North Point Pumping Station, with accommodation for sixty infants.

Personal.—Dr. P. McKittrick, Eau Claire, was operated on in Augustana Hospital, Chicago, July 2, for carcinoma at the base of the right side of the tongue.——Dr. Solon Marks, Milwaukee, celebrated his eighty-fifth birthday, July 14.——Dr. Rock Sleyster, for four years physician to the Wisconsin State Prison, Waupun, has been appointed superintendent and steward of the new hospital for the criminal insane, which is nearing completion at Waupun.——Dr. G. H. Ripley, Kenosha, has been elected president of the Wisconsin State Board of Medical Examiners.——Dr. H. V. Weld, Campbellsport, was seriously injured by the overturning of his automobile, recently.

GENERAL

Bequests and Donations.—The following bequests and donations have been announced:

Mount Sinai Hospital, New York City, a contingent bequest of one-half of the residuary estate of Dr. Sigmund Lustgarten, amounting to about $85,000.

New York Hospital, and the Isabella McCosh Infirmary, Princeton, N. J., each $5,000 for the endowment of a bed.

Boston Home for Aged Cripples, Boston Floating Hospital, New England Hospital for Women and Children, Industrial School for Crippled and Deformed Children, St. Luke's Home for Convalescents, Vincent Memorial Hospital, Children's Hospital of Boston, and Boston Home for Incurables, each $5,000 by the will of Charles B. Sias.

Infectious Diseases During June and July.—All of the infectious diseases have continued their prevalence during the early summer months but in a lessened degree, measles, perhaps, holding the lead in a number of cases.——During June and July small-pox has continued to be wide-spread, though in no serious epidemic form.——With the advent of warm weather infantile paralysis made its appearance in a number of places. The chief center of occurrence throughout the United States during June was perhaps in Texarkana, Texas, and in various towns along the Kansas City Southern R. R. in that region, forty-five or fifty cases having developed. The disease for the most part was mild and the mortality was not great. At this time the epidemic has subsided and only scattered cases are reported throughout the country.——About twenty cases of beriberi were found in one of the State Insane Asylums in Austin, Texas.——The Thompson-McFadden pellagra commission resumed its investigation into the etiology of pellagra with headquarters at Spartansburg, S. C. It has been reported that Dr. William H. Harris of the School of Tropical Medicine of Tulane University has succeeded in producing pellagra in monkeys by inoculation with a filterable virus obtained from cases of pellagra. The disease in monkeys was pronounced genuine pellagra by Dr. C. C. Bass, head of the Department of Tropical Diseases in the University. A preliminary report is soon to be made. The Thompson-McFadden commission has also taken up the experimental production of pellagra in monkeys at Spartansburg.——Reports of bubonic plague in the West Indies have stimulated the health authorities in the gulf and southern ports to renew their efforts toward the exclusion of rats which might be brought in by shipping at those ports.

The College of Surgeons of America.—The College of Surgeons of America announces the method of procedure which is required to attain fellowship in the organization. The board of managers, consisting of fifteen surgeons from all sections of North America, has the task of formulating the membership plan, which includes the reception of applications for membership and the final election to fellowship of those who fulfil the standard of requirements. Three classes of surgeons are eligible to immediate election to membership in the college. These groups include surgeons and men practicing surgical specialties who are recognized as surgeons of established reputation and divided for convenience into three classes: "A," men who were chosen to organize the college by the committee on foundation; "B," surgeons who are mem bers of one of the fifteen national organizations of surgeons and surgical specialties which are designated as constituent societies, and "C," surgeons of prominence not included in class "A" and not affiliated with the societies represented in class "B." Section "D" is to include all other candidates, namely, all recent graduates who wish to practice surgery as a specialty, or men in the practice of medicine who are desirous of developing a surgical specialty. The first three classes will be subject to consideration during the next six months and their names will be submitted to careful scrutiny. No man will come before the Board of Regents for final election to fellowship until the applicant has made a formal statement in writing of his desire to become a member. Surgeons of classes "A," "B" and "C" will receive notice that they are eligible and on request will be sent application blanks. Surgeons who come under class "D" will be furnished blanks by the secretary, on which they may make application for membership. When a surgeon's original application has been passed favorably by the committee on credentials, he will be sent a fellowship blank on which he may make his declaration of acceptance of the principles of the college, together with such other data and information as the board may require as a matter of regard. He will then be duly elected a fellow of the College of Surgeons of America.

FOREIGN

Other Deaths Abroad.—In addition to deaths reported by our correspondents, the following deaths are noted: Francis Gotch, M.R.C.S, England, Waynflete professor of physiology since 1895 and fellow of Magdalen College, Oxford; Holt professor of physiology in the University College, Liverpool, in 1891; who delivered the Croonian lecture on researches made with Sir Victor Horsley on the central nervous system regarding the method of electrical changes in nerve fibers, in 1891; author of several articles in the *Journal of Physiology;* died in London, aged 60.——J. Thiriar, former professor of surgery at Brussels and one of the leading surgeons of Belgium, recently died suddenly.——Karl Basch of Prague, known for his research on the secretion of milk and physiology of the thymus, aged 54.——C. M. Figueira, long professor of clinical medicine at Lisbon and a leader in keeping Portugal abreast with the progress of science, aged 84. Figueira was one of the first to describe aspergillosis——The second woman to obtain a medical degree in Switzerland, Caroline Farner, also has just died, at the age of 71. She had a large practice in Zurich and was one of the leaders in the woman movement in Switzerland, was instrumental in founding a free sanatorium for women and had charge of it for sixteen years. At 70 she took her last postgraduate course. Necropsy disclosed miliary tuberculosis and also complete tuberculous destruction of the left kidney which dated from a sickness fifty years before.

LONDON LETTER

(From Our Regular Correspondent)

London, July 12, 1913.

The International Medical Congress

THE SECTION OF THE HISTORY OF MEDICINE

The Section of the History of Medicine will be held at the Royal College of Physicians under the presidency of Dr. Norman Moore. Although this is the first international medical congress at which a section has been specially devoted to this subject, abundant testimony of the interest which it has excited is shown by the large number of contributions promised from the British Empire, the European continent and America. There will be exhibits of early medical books, manuscripts and other objects of medical interest. This section has also organized, with Mr. H. S. Wellcome, the important historical medical museum described in my last letter. The authorities of the British Museum have made arrangements for an exhibition of early medical books, coins and medals of medical interest.

THE MEDICAL MUSEUM

This important museum, which forms an intrinsic part of the congress, must not be confounded with the Museum of the History of Medicine referred to above. The chairman is Professor A. Keith, curator of the Museum of the Royal College of Surgeons. The museum will be arranged in divisions corresponding to the sections of the congress. Any specimen which is to be used at the various sections of the congress, or which illustrates any new medical discovery or observation, will be welcomed. No exhibit of a commercial nature will be accepted. Ample accommodation will be provided for formal and informal demonstrations in the museum. Thus exhibitors may show their specimens both there and in the sectional meetings of the congress. Many interesting exhibits are already promised. There will be a full representation of the progress of our knowledge relating to the early stages in the development of the human ovum. Mr. James Berry will exhibit a complete exemplification of the forms of aneurysms. Tumors of the pituitary, the breast and nipple, orthopedic methods and hemorrhage at the placental site, are only a few instances of special series which are being arranged. Radiology will occupy a prominent position. A special section of the museum, organized under the auspices of the International Association of Medical Museums, will illustrate recent improvements in the methods of preserving and exhibiting specimens.

The National Insurance Act

The first completed report on the working of the national insurance act forms a volume of 660 pages. It includes an account of the formation of an insurance fund of nearly $100,000,000, the insuring of nearly fourteen million persons, the constitution and work of 236 insurance committees, and the making of regulation and special orders to meet unusual cases. During the first four months after the act came into force (July 15, 1912), 2,865 applicants received the sanatorium benefit for tuberculosis in residential institutions, 507 in tuberculosis dispensaries, and 891 at home. By April 30, 1913, the number in residential institutions had increased to 7,464, those treated in dispensaries to 2,167, and those treated at home to 4,993. At present there are in England over two hundred residential institutions which have accommodation for eight thousand cases. The medical benefit agreements with physicians were first entered into for a period of only three months. It is claimed to be significant as an indication of the general attitude of the profession that on the expiration of this period the agreements were renewed by practically all the physicians. On January 15, 17,796 physicians were on the panels; on April 14, the number was 18,584, which forms between 80 and 90 per cent. of those engaged in industrial practice.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 4, 1913.

Compulsory Reporting of Tuberculosis

The Académie de médecine recently adopted the amendment presented by Dr. Roux, which recommends that the report shall be made to a physician in the Public Health Service, who will treat it as a professional secret and who will attend to the carrying out of prophylactic precautions when these are not guaranteed by the attending physician. The report recommends also that it be made incumbent on the Public Health Service to provide for indigent tuberculous patients the cure that their condition demands, and also to give assistance to their families.

The academy then adopted the additional proposal made by Professor Urdal as follows: In the construction of any new hospital on French territory isolated quarters shall be provided for patients affected with open tuberculosis in proportion to the number of the population that the institution is to serve.

Aviation and First Aid to the Injured

Search for the wounded on large battlefields is perhaps the most arduous of the many tasks imposed on the hospital corps. It is therefore important to increase the tools in the hands of this service for carrying out the search. The systematic use of ambulance drays in the hospital corps has already been adopted (The Journal, Aug. 26, 1911, p. 751, and Jan. 25, 1913, p. 299). Now the aeroplane is going to offer its valuable assistance in this work. Dr. Emile Reymond, senator from the Loire, who is very much interested in aviation, experimented during the last great aviation meet with a view to determining what aid air-ships could furnish in this direction, and he has just communicated to his colleagues of the reserve corps and the territorial army the results of his investigation, and the experiments which he thinks are justified by them. He says the wounded can be found without any great difficulty, especially if the injured man, hearing the sound of the motor, will wave some object which will attract the attention of the aviator. A biplane is to be preferred because from it the field can be surveyed more easily. The aeroplane of the army corps will be most effective if stationed near the staff headquarters and consequently near the director of the hospital corps, who will have automobiles at his disposal. The aeroplane will be an excellent means of communication between the troops in the field and the hospital corps, during the battle as well as after it. With its help, we shall never again see, as we did in the Balkan War, the wounded lying for several days without any help, several miles from a hospital station. It can even, if necessary, carry considerable quantities of supplies to a given point, thus establishing connections between groups of wounded and headquarters, or between the latter and the base of supplies. In short the ambulance air-ship would seem to be absolutely necessary in future warfare.

Death of Professors Motais and Thiriar

Dr. Ernest Motais, professor of the ophthalmological clinic of the Ecole de Médecine d'Angers, national representative of the Académie de Médecine since 1901, has just died in Paris as the result of an operation.

The death is announced of Dr. Julius Thiriar, former professor of the surgical clinic of the Faculté de médecine de Bruxelles.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 28, 1913.

Personal

Professor Sauerbruch of Zurich has declined the call to Halle.

Some unofficial transactions are now in progress with reference to the call of Professor His, director of our first medical clinic, to Vienna as the successor of von Noorden. Whether or not they will succeed in their purpose is uncertain. It is not my impression that the departure of His from Berlin would cause very much distress either to him or to the Berlin physicians; he has not been able to get the right footing here.

Professor Kruse of Bern has received a call as successor of Professor Hofmann to the chair of hygiene at Leipsic and he will probably accept it.

On June 17 the former general staff surgeon of the Bavarian army, Dr. von Vogl, died at the age of 79. He had performed an important service in the organization of the Bavarian military health service. He retired in 1900.

According to the *Kölnische Zeitung*, Dr. Friedmann has returned to Germany. The news will certainly not be received by his German colleagues with any special satisfaction. With all our altruistic tendency and with the best wishes toward America and its physicians, we would not have been greatly distressed if Dr. Friedmann had taken up a permanent residence with you. At any rate, it will be interesting to learn how Dr. Friedmann will conduct himself with reference to the injury which his reputation has received on both sides of the Atlantic.

Conviction of Antivaccinationist Physicians

As I informed you a long time ago, two antivaccination physicians—Dr. Spohr and Dr. Bachen of Frankfort-on-the-Main—were tried, Dr. Spohr because he did not notify the authorities of his own illness with small-pox and the cases in his family and practice, and Dr. Bachen because he did not report cases of small-pox occurring among his clients. The trial was held June 20 and ended with the conviction of both physicians and a fine of $75 (300 marks) each. The district attorney asked for a sentence of imprisonment on account of criminal carelessness and manslaughter from negligence (one woman with small-pox died). It is notable that in the trial Sticker of Bonn appeared as an expert on the side of the accused. Sticker affirmed that man is not always to be regarded as the only transmitter of the small-pox virus but that the air also plays a great rôle in the spread of small-pox.

The Rudolf Virchow Building

The difficulties in the way of the erection of the Rudolf Virchow-Haus planned by the Berlin Medical Society, which I have repeatedly mentioned, seem at length to have been completely removed. The city authorities of Berlin are discussing with the city council a grant to the medical society of an appropriation to the amount of $250.000 (1,000,000 marks) for its building and at the same time the sum of $2,500 (10,000 marks) yearly for five years. The condition of this very creditable resolution is that the building shall serve to honor Rudolf Virchow, the esteemed citizen of Berlin, and that the auditorium of the building shall be open to the public for general purposes such as lectures of the central commission of the Krankenkassen. The city council agreed to the proposal and principle, but appointed a committee to consider the details, as the financial relations will need to be thoroughly settled.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 5, 1913.

Professor von Noorden's Farewell Lecture in Vienna

A few days ago, Professor von Noorden in a splendid lecture, bade goodbye to his pupils and assistants in his Vienna clinic, which once more caused us to feel with deep regret his decision to leave this city. Aside from the purely medical part of his speech, the greatest attention centered around that which he said about the reasons for his "flight," as he termed it, from Vienna. It is generally believed that Professor von Noorden had met opposition on the part of his colleagues in the senate of the Vienna University, and that he did not feel quite at home here for these reasons. But one of the chief reasons of his departure was the laxity, not to say negligence, of the government in fulfilling the promises given him when he was asked to accept the office. Only with great difficulty had he been able to get his new clinic made ready for his use, and this institute had become so great and so much frequented by students and doctors that the work had outgrown his powers. He felt the desire to be his own master, and he returned to Frankfort because he wanted to spare his energy and his mental forces for research, and no longer wanted to perform the duties of a clinical teacher and official instructor. The professor then enumerated the scientific achievements and works originating from his Vienna clinic within the last four years, there being more than three hundred important contributions to the pathology of metabolism, circulation and hematology. Among the greatest may be mentioned pathology and therapy of diabetes, chemical microscopy of the blood, a handbook of diseases of the heart, the respiratory conditions in diabetes and the use of radium and mesothorium in various diseases, as well as investigations on a new reaction in syphilitic serum, especially cultivated within the past few months. His loss is a severe blow to the University of Vienna. He was a great organizer, and founded a real school of metabolism research here, which caused students from all the world to flock to Vienna, where the model metabolism kitchen in his clinic, was a prominent feature. Although some doctors did not approve of his methods regarding the financial side of a consulting practice—he was and is a clever business man—the authority of von Noorden here was always undisputed.

Attempts are being made to prevent an interruption of the course of teaching as instituted by von Noorden, and a large section of the profession would prefer to see another "metabolism" man as his successor. There are not many, however, who could fulfil the requirements for this post, and the negotiations with professors in Germany (Schmidt and Krehl) have been unsuccessful. Lately Professor His (Berlin) has been invited to come to Vienna, but as yet his decision is unknown.

Marriages

Amzi Bedell Shoemaker, M.D., North Attleboro, Mass., to Miss Bessie Adele Wheaton of New York City, in Providence, R. I., June 2.

Otto Earle Longacre, M.D., Loup City, Neb., to Miss Katherine Tucker of New Canaan, Conn., in New York City, June 19.

William Hamilton Long, M.D., Louisville, Ky., to Miss Ella J. Zinsmeister of New Albany, Ind., July 10.

Frank Raphael Strong, M.D., to Miss Grace E. Kilmer, both of Brewerton, N. Y., in New Jersey, recently.

Lorimer Jennings Moorefield, M.D., High Point, N. C., to Miss Ruth Boyd of Charlotte, N. C., July 7.

Millard Holloway Irwin, M.D., Nokomis, Ill., to Miss Harriet Tucker of Evansville, Ind., June 28.

R. Sidney Cauthen, M.D., Charlotte, N. C., to Miss Cynthia Emily Sessions of Cuthbert, Ga., July 9.

Wayne Person Hanson, M.D., Los Angeles, Cal., to Miss Nellie C. Snider of Philadelphia, July 23.

Frank Lee Stone, M.D., Beaver Crossing, Neb., to Miss Leone M. Gilbert of Chicago, June 30.

Charles Grant Eicher, M.D., to Miss Nannie Tannehill, both of McKees Rocks, Pa., June 28.

Charles E. Bingaman, M.D., Pottsville, Pa., to Miss Florence Beard of Birdsboro, Pa., July 2.

Ivan Isaac Yoder, M.D., Cleveland, Ohio, to Miss Bertha May Zigler of Seville, Ohio, July 10.

Dempsey Orville Sheppard, M.D., Barnesville, Ohio, to Miss Sarah Fees of Pittsburgh, June 26.

Claude C. Smink, M.D., Lauraville, Md., to Miss Lillian Long at Westover, Md., June 30.

Ervin Torok, M.D., New York City, to Miss Louise Bentley Felter of Brooklyn, July 1.

John N. Gaston, M.D., to Mrs. Rosa B. Hoke, both of Edgemoor, S. C., July 3.

Deaths

Ralph S. Lavenson, M.D. University of Pennsylvania, Philadelphia, 1902; a fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania and Medical Society of the State of California; formerly assistant medical director of the Philadelphia General Hospital; assistant demonstrator of pathology in his alma mater; associate in medicine in the William Pepper Laboratory of Clinical Medicine; died at his home in Los Angeles, July 6, from tuberculosis, aged 36.

William Taussig, M.D. St. Louis University, 1851; LL.D., Washington University, 1905; a pioneer practitioner of St. Louis; mayor of Carondelet in 1852; a member of the St. Louis County Court from 1859 to 1865 and its presiding judge for the last two years of this time; director and general manager of the St. Louis (Eads) Bridge Company from 1867 to 1896; a member of the St. Louis Board of Education from 1909 to 1911; died at his home, July 10, from pneumonia, aged 87.

Ferdinand N. Sauer, Jr., M.D. College of Physicians and Surgeons, Baltimore, 1901; formerly a member of the American Medical Association; a member of the Medical Society of New Jersey; medical examiner for the New Jersey Civil Service Commission; a pioneer in the establishment of pasteurized milk depots in Jersey City, while chief inspector of the Jersey City Board of Health; died at his home in Jersey City, June 8, from heart disease, aged 39.

Clark Ingersoll Wertenbaker, M.D. Georgetown University, Washington, D. C., 1894; first lieutenant M. R. C., U. S. A.; captain and assistant surgeon, U. S. V., from 1901 to 1903, with service in Cuba, the Philippine Islands and Alaska; a member of the Association of Military Surgeons of the United States; died at his home in Washington, D. C., July 6, from heart disease, aged 40.

Thomas Griffin Ford, M.D. Bellevue Hospital Medical College, 1870; a member of the Louisiana State Medical Association; from 1878 to 1888 surgeon in charge of the Charity Hospital and later a member of the board of administration and for twelve years a member of the Shreveport city council; for more than thirty years a practitioner of Shreveport; died in Hot Springs, Ark., where he was attending a patient, July 7, aged 64.

Frank H. Boynton, M.D. New York Homeopathic Medical College, New York City, 1874; professor of clinical ophthalmology and president of the New York College and Hospital for Women; senior surgeon of the New York Ophthalmic Hospital; died at his summer home, Mount Washington, Mass., July 3, from heart disease, aged 53.

Alexander Gunn, M.D. University of Michigan, Ann Arbor, 1864; a member and president of the Northeastern Medical Association; for several years health officer of Lenox township and health officer, member of the school board and president of the village of New Haven, Mich.; died at his home July 6, from senile debility, aged 80.

Harry Stillman Wilcox Spencer, M.D. Rush Medical College, 1908; a fellow of the American Medical Association and once secretary of the Kankakee Medical Society; was drowned while fishing in the Kankakee River, July 17, aged 33.

Charles O. McCune, M.D. College of Physicians and Surgeons, Baltimore, 1879; a member of the Ohio State Medical Association; of Unionville Center; died in Mount Carmel Hospital, Columbus, July 5, from heart disease, aged 66.

Albert W. Killgore, M.D. Medical College of Indiana, Indianapolis, 1882; a member of the Colorado State Medical Society; died at his home in Fort Collins, Colo., June 23, from myocarditis, aged 57. At a special meeting of the Larimer County Medical Society, June 26, resolutions of respect and sympathy were unanimously adopted.

Warren Nichols Horton, M.D. Washington University, St. Louis, 1903; professor of genito-urinary diseases in the College of Physicians and Surgeons, Los Angeles, Cal.; formerly city bacteriologist of Los Angeles; died in the Angelus Hospital in that city, July 5, two days after an operation for appendicitis, aged 32.

Henry Furness, M.D. New York University, New York City, 1875; president of the Malone (N. Y.) Society for the Prevention of Cruelty to Animals; vice-president of the Alice Hyde Memorial Hospital, and consulting physician to the Sanitarium Gabriels; died at his home in Malone, July 5, aged 63.

Frank Mero Wiles, M.D. Medical College of Indiana, Indianapolis, 1883; a fellow of the American Medical Association; for twenty-three years a member of the staff of the Central Indiana Hospital for the Insane, Indianapolis; died in St. Vincent's Hospital in that city, July 7, from nephritis, aged 56.

Ellet Orrin Sisson, M.D. Keokuk (Ia.) Medical College, 1892; a member of the American Academy of Ophthalmology and Otolaryngology; formerly professor of dietetics and histology and director of the histologic laboratory in his alma mater; died at his home in Denver, July 4, from tuberculosis, aged 42.

William Frederick A. Kemp, M.D. University of Maryland, 1872; formerly vice-president and for fifteen years treasurer of the Medical and Chirurgical Faculty of Maryland, and president of the Baltimore Medical Association; died at his home in Baltimore, July 10, aged 64.

George Warren Jones, M.D. Harvard Medical School, 1872; formerly surgeon to the Soldiers' Home in Massachusetts, Chelsea, and president of the Boston Gynecological Society; died in the Massachusetts General Hospital, June 5, from cerebral hemorrhage, aged 64.

George T. Kimball, M.D. University of Pennsylvania, Philadelphia, 1881; formerly a member of the American Medical Association and a charter member of the Kenosha County Medical Society; died in a drugstore in Kenosha, July 10, from cerebral hemorrhage, aged 54.

Robert David Scott, M.D. College of Physicians and Surgeons, Chicago, 1900; health editor of the South Bend (Ind.) *News Times;* formerly lecturer in neurology in his alma mater; died at the home of his sister in South Bend, July 11, from cerebral hemorrhage, aged 48.

Jethro G. Bohannon, M.D. University of Louisville, Ky., 1874; a member of the Kentucky State Medical Association; for many years a member of the Muhlenberg County Board of Health; died at his home in Greenville, July 4, from cerebral hemorrhage, aged 60.

James Franklin Cravens, M.D. Rush Medical College, 1857; a practitioner of Chicago from 1860 to 1898, when he moved to Spirit Lake, Iowa, to become president of the First National Bank of that place; died at the home of his niece in Chicago, July 20, aged 78.

Ralph Henry Kinney, M.D. Rush Medical College, 1904; a fellow of the American Medical Association; of Lancaster, Wis.; aged 33; was drowned in the Mississippi River near Cassville, Wis., June 27, while attempting to save three women from drowning.

Frank Maitland Madison, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1884; formerly of Chicago; believed to have been of unsound mind and a pyromaniac, who is said to have confessed arson; hung himself in the San Diego city jail, July 9.

Lewis T. Smith, M.D. Jefferson Medical College, 1876; a member of the medical Society of the State of Pennsylvania; president of the Citizens' Telephone Company of Trauger, Pa.; died at the home of his daughter in Johnstown, Pa., June 28, aged 66.

Lewis H. Skaggs, M.D. Rush Medical College, 1863; surgeon of the Ninety-Fourth Illinois Volunteer Infantry throughout the Civil War; and for half a century a member of the Illinois State Medical Society; died at his home in Leroy, July 10, aged 78.

John S. Pitts, M.D. University of Nashville, Tenn., 1861; assistant surgeon of Wheeler's Cavalry and of the Fifty-First Alabama Infantry, C. S. A., during the Civil War; died at his home in Verbena, Ala., June 25, aged 81.

Clinton Hastings Catherwood, M.D. Dartmouth Medical School, 1896; formerly of New York City; one of the founders of the Colorado Kennel Club and an ardent worker in the Colorado Humane Society; died at his home in Denver, July 1, from tuberculosis, aged 41.

Charles S. Penfield, M.D. Hahnemann Medical College, Chicago, 1880; a member of the Washington State Medical Association; died at his rooms in the Willard Hotel, Spokane, July 7, from cerebral hemorrhage, aged 55.

Leland H. Munger, M.D. Missouri Medical College, St. Louis, 1879; a fellow of the American Medical Association; one of the leading practitioners of Winona County, Minn.; died at his home in Winona, July 9, aged 56.

Henry H. Caldwell, M.D. University of California, San Francisco. 1890; a practitioner of Indiana for more than fifty years; was found dead in his apartments in that city, July 5, from heat exhaustion, aged 80.

Marion Oliver, M.D. Queens University, Kingston, Ont., 1884; a missionary of the Presbyterian Board at Indore, Central India, from 1886 to 1911; died at her home near St. Mary's, Ont., May 22, aged 55.

Charles C. Sater, M.D. Miami Medical College, Cincinnati, 1872; died at his home in Atlanta, Ill., June 25, from the effects of a wound received during the Civil War, aged 73.

Joseph Merton Bunting, M.D. Baltimore Medical College, 1909; a member of the Medical Society of the State of New York; died recently at his home in Kingston, aged 28.

Edmond M. Cowart, M.D. Hospital College of Medicine, Louisville. 1897; of Bond, Miss.; died June 27, as the result of skull fracture received in a fight the day before.

Isaac C. West, M.D. Hahnemann Medical College, Chicago, 1889; one of the oldest practitioners of Dallas, Tex.; died at his home, June 30, from heart disease, aged 70.

Stanley Emanuele Tron, M.D. Harvard Medical School, 1910; died at his home in Utica, N. Y., June 22, it is believed from the effect of poison self-administered, aged 29.

Bailey Peyton Key, M.D. University of Nashville, 1874; a Confederate veteran; died at his home in Tracy City, Tenn., June 28, from pneumonia, aged 63.

James B. Neff, M.D. College of Physicians and Surgeons, of Ontario, Toronto, 1878; died at his home in Port Colborne, Ont., about June 29, aged 73.

Adna Leonard Innes, M.D. Pulte Medical College, Cincinnati, 1904; of Cleveland; died at the home of his sister in Clinton, Cincinnati, July 4, aged 35.

William Riley Lewis, M.D. University of Iowa, Iowa City, 1878; died at his home in Los Angeles, May 17, from progressive paralysis, aged 61.

Reuben F. Corlett, M.D. Detroit College of Medicine, 1893; of Birch Run, Mich.; died in Saginaw about July 9, from peritonitis, aged 48.

Charles Beaney Humiston, M.D. University of Michigan, Ann Arbor, 1874; died at his home in North Dover, Ohio, June 27, aged 62.

Solomon T. Metty (license, Kansas, 1901); for more than half a century a practitioner of Topeka; died at his home, June 30, aged 76.

James Samuel W. Williams, M.D. University of Victoria College, Coburg, Ont., 1867; died at his home in Oakville, Ont., June 4, aged 72.

John G. Weber, M.D. University of Jena, Austria, 1865; for many years a resident of New York City; died at his home, July 2, aged 70.

Isaac P. Lamb, M.D. Homeopathic Medical College of Missouri, St. Louis, 1883; died at his home in Houston, Tex., July 1, aged 67.

Harry Ezekiel Morrison, M.D. Vanderbilt University, Nashville, Tenn., 1900; died at his home in Medford, Ore., recently, aged 36.

James Myers, M.D. Joplin (Mo.) College of Physicians and Surgeons, 1882; died at his home in Greensburg, Mo., June 20, aged 65.

William Jonathan Cain, M.D. Jefferson Medical College, 1910; died at his home in Pittsburgh, June 28, aged 27.

J. B. Neal (license, Arkansas, 1903); for several years postmaster of McCrory; died June 24, aged 71.

W. P. Snyder (license, Oklahoma, 1908); of Alex; died recently in Bailey, Okla., aged 52.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE NULIFE FRAUD

Truax, Greene & Company Give Helpful Hints to Busy Doctors

Physicians in Chicago, and doubtless elsewhere over the country, have within the last few days been favored with an illustrated price list entitled "The Greeneway," sent out by Truax, Greene & Co., Chicago. This, we would emphasize, is written for and addressed to physicians—members of a supposedly learned profession.

Two and one-half pages of this sixteen-page brochure are devoted to the exploitation of "Prof. Charles Munter's Nulife Shoulder Braces and Supporters." The information given in these pages will interest a profession that is always seeking light on scientific subjects. Nulife, physicians are told, "makes the weak strong and happy, the strong impervious to common ills." Those who wear Nulife "cannot possibly become sick or overheated." Furthermore, we learn, "the human body represents the most perfect system of circulation and ventilation ever created," but unfortunately this system of ventilation and circulation is frequently impaired by careless individuals who allow their "shoulders to droop downward," which results, according to Truax, Greene & Co., in "congealing the intestines."

Nulife, it is claimed, supports the spine, and physicians are informed that the spine "is composed of small pieces of bone set one above the other." Switching from anatomy to pathology, the medical profession is further told that "the least extra pressure on these individual pieces of the spine, sometimes causes paralysis in different parts of the body. This generally starts from round shoulders which Nulife prevents." Round shoulders as an etiologic factor in paralysis may come as a helpful hint to those medical men who have cases of this kind under observation.

But this is by no means the limitations of Nulife. It also "prevents pressure on the stomach and the internal organs of the stomach, freeing them so that they do not crowd and interfere with each other." As it is highly desirable that the "internal organs of the stomach" should not "crowd and interfere with each other" Nulife will come as a boon and a blessing. It is evident, after reading Truax, Greene & Co.'s dissertation, that the medical profession has never been fully alive to the dangers of "sagging shoulders." As soon as the shoulders sag they "close or clog the breathing tubes with the foul and heated gases of the stomach" with the dire result that these "heated gases" "burn away the mucous membrane causing the tubes to stick together and interrupt the air circulation in the body."

Finally those physicians who have among their patients some more or less intractable cases will be thankful for the information that "Nulife immediately relieves any case of catarrh, bronchitis, asthma or indigestion no matter how chronic nor how long standing." And those who are treating pulmonary tuberculosis may read with amazement that when Nulife is used "lung trouble also disappears as the lung cells fill with air and start to vibrate into life."

Summed up, it seems that Truax, Greene & Co. serves up to the medical profession of the United States a mess of unscientific trash, of false and fraudulent statements and of lying claims for which even the advertising copy-writers for Lydia Pinkham, Peruna or Munyon would be ashamed to stand sponsor. We could, if it seemed worth while, discuss the nostrums of the "ethical proprietary" type also advertised in the Truax, Greene's catalogue. But it is not worth while. It is sufficient to say that a company which thinks that it can appeal to the medical profession with advertising methods that have been abandoned even by the "patent medicine" fakers, is out of joint with the spirit of the times.

ENESOL

An Arsenic and Mercury Preparation of Uncertain Composition

The following letter was received from Dr. E. O. Smith, Marquette, Kansas:

"Under separate cover, I mail you a sealed tube of 'Enesol' which I should be pleased to have analyzed in the Association's laboratory and reported on. As you will note, Enesol is of foreign manufacture. Its formula is not given in the literature accompanying it. Enesol is being used by intramuscular injection in a severe case of diabetes mellitus by a physician in one of the large cities. The patient, formerly under my care, is making regular trips to the city over 200 miles away to receive these injections under the impression that they will cure his diabetes. The physician giving the injections informed the patient that each sealed tube, the contents of which constituted a single dose, contained three grains of arsenic.

"I expressed doubt to the patient about the amount of arsenic being injected and, on a recent visit to the city, he told his city physician of my skepticism so his physician enlightened me by sending me the sealed tube which I am mailing THE JOURNAL. He also sent me a letter stating that each tube contained 3 grains of arsenic and ¼ grain of mercury bichlorid in solution. In view of the fact that a half grain of arsenic has been known to produce poisonous symptoms and three grains have been known to prove fatal, I am still skeptical.

"Will intramuscular injections of arsenic and mercury bichlorid in any amount have any specific effect on the sugar output in diabetes mellitus? If so, how?"

The Council on Pharmacy and Chemistry had Enesol under consideration some time ago. The manufacturer did not give exact information regarding the composition of his remedy. While he stated that it was a salicyl arsinate of mercury, a molecular combination of monomethyl arsinic acid and a double salicylate of mercury and sodium, he failed to give a formula by which the composition of the substance could be determined. The Council voted to reject the product because (1) the origin and exact composition of Enesol was not given, (2) the manufacturer had made misstatements regarding the identity of the preparation and (3) there was a discrepancy between the composition as advertised and that found by analysis.

A specimen of Enesol submitted by the manufacturer was examined in the Association's laboratory and found to contain about 20 per cent. arsenic, instead of 14.4 per cent. as claimed, and less than 16 per cent. of mercury, instead of 38.46 per cent. as claimed. The Enesol circular states that the preparation comes in bulbs of 2 c.c. capacity containing 3 cg. to each cubic centimeter. According to this, there would be about 6 cg. (1 grain) of Enesol in each bulb. If the manufacturer's claim could be accepted this would mean that the contents of each bulb would contain the equivalent of 1/7 grain of arsenic or about ¼ grain of arsenous oxid.

It is possible that arsenic in the form in which it occurs in Enesol is not as toxic as ordinary arsenic so that the dosage given might be tolerated by the organism under normal conditions. Accidents, however, occur in the giving of such products because of some abnormal decomposition in the system. Thus atoxyl, so named from its supposed lack of poisonous properties, is ordinarily borne in doses containing a considerable amount of arsenic; in other cases, however, it undergoes some change in the system by which poisonous effects are produced. Similar accidents have happened in the administration of salvarsan; consequently when one undertakes the use of a remedy containing an unknown but dangerous quantity of arsenic, he is running the risk of possible accident which may cause serious injury or be fatal to his patient. This is the first objection to the use of an uncertain and untrustworthy preparation like Enesol. The second objection is the attempt to extend its use to the treatment of diseases in which the administration of arsenic has not been justified by experience.

Arsenic is doubtless useful in certain forms of skin disease, but this is no justification for the indiscriminate use of a dangerous preparation in diseases of the skin. It is true, too, that the claim has been made that arsenic is of service in diabetes, but positive clinical proof of this assertion is wanting, and, in the present state of our knowledge, the use of arsenic in diabetes must be regarded as more or less of an experiment.

The physician may properly experiment with the well-known and manageable preparations of arsenic. If signs of overdose appear the suspension of the remedy is sufficient to enable the system to rid itself of the small quantity ingested. When, however, one administers a possibly fatal dose of arsenic to secure the doubtful benefit of arsenic in diabetes, he is making an inexcusably dangerous experiment.

Further, in giving Enesol one is not only giving arsenic, but also a large dose of mercury. Mercury, so far as we know, has never been used for the treatment of diabetes. The use of Enesol is therefore unwarranted because forms of arsenic are available which do not contain the added poison, mercury. We have been able to find no recommendation by recognized authorities of the use of mercury and arsenic by intramuscular injections in diabetes.

THE "STRONG-ARM" METHODS OF THE ADVERTISING QUACK

How Emil William Nelson Was Swindled by "Dr. Cook & Co."

The history of the swindling of Emil William Nelson, an Alaskan miner, out of more than $2,000 by "Dr. Cook & Co.," a medical corporation of Seattle, is an example of the "strong-arm" methods sometimes employed by medical pretenders in stripping their victims of their money. The ordinary highwayman takes only money; that is, if his victim obediently throws up his hands; but these medical highwaymen not only took practically all of Nelson's money (and he surely threw up his hands), but subjected him to alleged treatments as well which may have been no less dangerous to life than the more brutal onslaught of the robber on the public road.

The legal records in the case give a graphic description of the manner in which Nelson was swindled, and incidentally contain an interesting ruling of the court that a corporation does not and can not have a license to practice medicine, and any moneys paid to it for treatment of a patient are paid without a consideration and contrary to public policy.

The chief persons interested in "Dr. Cook & Co." were C. K. Holsman and H. J. Jiles, who own and run a number of medical institutions or offices in Pacific Coast cities. It is alleged in the complaint of Nelson that Holsman as president and manager for "Dr. Cook & Co." received the patients induced to come to the office by their advertisements in the daily papers, "sized up" their financial ability, discovered the amount of cash they had on hand or in bank, as nearly as he could, and fixed the charges to be made to said patients in proportion to their financial ability and in proportion to the false diagnoses made by the alleged doctors of the company, who, of course, made the patients believe themselves much more seriously ill than they really were.

The complaint then recites that Nelson, a Swede, accustomed to believe the statements made by the newspapers and in print, was induced to apply to "Dr. Cook & Co." for treatment of a slight ailment then affecting him; there was, it is said, in fact nothing much the matter with him, but when he applied to "Dr. Cook & Co." he was received by Holsman, turned over to an alleged doctor in the office, and for about a month and a half thereafter induced to take treatments for which he paid "Dr. Cook & Co." $550 in cash. Later Holsman represented to Nelson that he would need an electrical battery for treating himself, which "Dr. Cook & Co." would supply for $160; this Nelson paid for by check on a bank. As a result of this, it is alleged, Holsman through his agents and servants was enabled to find out that Nelson had about $3,000 in the bank on which he drew the check. They then, according to the complaint, set about "fraudulently, unlawfully and wrongfully" to get possession of this sum, and "pursuant to such conspiracy to thus cheat and defraud plaintiff and get his money from him for nothing,"

C. K. Holsman induced Nelson to have a consultation with an "eminent practitioner" from the East, then in Seattle. This was said to be H. J. Jiles, also connected with "Dr. Cook & Co." and with the other enterprises in which Holsman is interested. He told Nelson that he was afflicted with some very serious ailment, that unless an operation was performed he would certainly die, and that no one except this "eminent practitioner" could perform the operation that would save his life. He explained that this was a very expensive operation to perform, and that it would cost the plaintiff the sum of $1,525. Nelson drew his check for this sum and paid it over to "Dr. Cook & Co." for the alleged operation. It is then stated in the complaint that the next day Nelson was taken to the operating room and placed on the operating-table in the presence of the alleged "eminent practitioner" in the service of "Dr. Cook & Co.," and, after an injection of some kind which deprived him of his senses and capacity to understand or act intelligently, he was held up in the arms of one of the agents of the defendant, Dr. Cook & Co., his check book was placed in his hands by another, and he was induced to sign a check on the Washington Trust & Savings Bank for the sum of $762.50, payable "to cash." This check was later cashed by "Dr. Cook & Co.," and the proceeds received by the company.

For all the money obtained by these outrageous methods, the complaint alleges that no operation of magnitude and no treatment of any account was performed or administered to Nelson. It is said that Nelson "was so overcome, hypnotized, weakened and distressed, that he was incapable of transacting any business at all and was completely under the influence and domination of Holsman and his agents." The complaint characterizes the corporation as "a fraudulent concern" and its agents, servants and so-called doctors and physicians as "quacks, charlatans, frauds, and cheats."

"Dr. Cook & Co.," in its answer to the complaint, denied everything except that it was a corporation in which Holsman was interested, but alleged the concern had given Nelson a large number of treatments and had performed two operations. Judgment was given against the defendants for $2,287.50, although Nelson had paid them practically $3,000. The office of "Dr. Cook & Co." was sold out and Nelson recovered a part of his money.

The details by which Nelson was swindled out of this large sum constitute an extreme case, perhaps, but it illustrates the lengths to which such medical schemers will go in their wretched business.

Correspondence

The Treatment of Narcotic Addiction

To the Editor:—As I am interested in the treatment of morphin or opium and alcohol addictions, I read the article by Dr. Alexander Lambert in The Journal, June 21, 1913, p. 1933, with much interest. Belladonna and scopolamin have been given for years in many drug habit institutions, apparently for the purpose of bringing the patient into a state of delirium to facilitate the abrupt discontinuance of the drug. I think that this kind of treatment should be discarded on account of the bad after-effects of these poisons, especially when administered to psychasthenic patients when their mind is in a weak, deteriorated and morbid condition.

I never undertake the treatment of a case of alcoholic addiction unless the patient can be under my supervision for at least two weeks, and in the case of morphin or opium, from four to six weeks at least is demanded. I have never seen the necessity of giving a patient who has taken from 30 to 60 grains of morphin daily, more than from 2 to 5 grains hypodermically to begin with, and this amount is slowly reduced.

The main thing in treating drug-fiends is first to get full control of them by gaining their confidence and to have a reliable nurse to handle them, and secondly to bring about thorough elimination of the poisons and the faulty metabolic products. The recommendation of the "blue mass combination" is good, but for thorough elimination I find nothing of more value than a full sweat-pack after a good cathartic. Pilocarpin may be used in combination with these if necessary, and the treatment repeated every second day. The skin of the drug-fiend is dry (leather-like), and the effect of the pack is surprising in opening the pores and also in relieving the neurotic pains frequently present. I advise the patient to stay in bed for at least two weeks without any exertion or exercise.

M. Loewenthal, M.D., Cleveland.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INTERNAL SECRETION

To the Editor:—Please give references to literature on internal secretions.

Burton J. Hendrick, New York.

Answer.—The following list may be referred to:

Vincent, Swane: Internal Secretions and the Ductless Glands. Longmans, Green & Co., New York, 1912. Price, $3.50.

Biedl, Arthur: The Internal Secretory Organs. William Wood & Co., 1913. Price, $6.

Cohn, F.: Interrelations between Internal Secretions of Mamma and Ovary, *Monatsschr. f. Geburtsh. u. Gynäk.*, January, 1913; abstr., The Journal, March 1, 1913, p. 706.

Morris, N.: Internal Secretions in Relation to Dermatology, *Brit. Med. Jour.*, May 17, 1913; abstr., The Journal, June 21, 1913, p. 1982.

Graves, W. P.: Influence of Ovary as Organ of Internal Secretion. *Am. Jour. Obst.*, April, 1913; abstr., The Journal, April 26, 1913, p. 1324.

Münzer, A.: Emotional Factors in Disease of Organs with an Internal Secretion, *Berl. klin. Wchnschr.*, June 17, 1912; abstr., The Journal, July 27, 1912, p. 313.

Goldmann, E. E.: External and Internal Secretions Studied by Injecting Stain into Living Animals, *Beitr. z. klin. Chir.*, March, 1912; abstr., The Journal, April 27, 1912, p. 1319.

Schickele, G.: Thrombosis and Internal Secretion, *München. med. Wchnschr.*, Jan. 23, 1912; abstr., The Journal, March 2, 1912, p. 672.

Cohn, M., and Peisner, H.: Disturbances in the Internal Secretion with Diseases of the Pancreas, *Deutsch. med. Wchnschr.*, Jan. 11, 1912; abstr., The Journal, Feb. 17, 1912, p. 552.

Kastle, J. H.: Internal Secretion of Mammae as Factor in Onset of Labor, *Jour. Infect. Dis.*, March, 1912; abstr., The Journal, April 13, 1912, p. 1150.

Fürst, V.: Glycosuria and Internal Secretions. *Norsk Mag. f. Laegevidensk*, May, 1913.

Schiffmann, F., and Vystavel, A.: Has the Mammary Gland an Internal Secretion? *Wien. klin. Wchnschr.*, Feb. 13, 1913.

Berkeley, W. N.: How Far Have We Got with Clinical Use of Internal Secretions? *Old Dominion Jour. Med. and Surg.*, May, 1913.

Kranz, P.: Influence of Internal Secretions on Dentition, *Beitr. z. klin. Chir.*, November, 1913.

v. Frankl-Hochwart, L.: Influence of Internal Secretion on the Mind, *Med. Klin.*, Dec. 1, 1913.

Barnabo, V.: Experimental Research on the Internal Secretion of the Testicles, *Policlinico*, April 20, 1913.

Rosenthal, A.: The Secretions in Diabetes Insipidus, *Berl. klin. Wchnschr.*, June 24, 1912.

Williams, T. A.: Psychogenesis and Internal Secretions: Experimental Data and Pathogenesis, *Med. Press and Circular*, July 17, 1912.

Bittorf, A.: Cases Demonstrating Disturbances in Internal Secretion, *Berl. klin. Wchnschr.*, June 3, 1912.

Georgopulos, M.: Experimental Research on the Interrelations of the Glands with an Internal Secretion, *Ztschr. f. klin. Med.*, July 20, 1912.

Kintsi: Internal Secretion of the Corpus Luteum, *Monatsschr. f. Geburtsh. u. Gynäk.*, Oct. 20, 1912.

Starr, M. A.: Neuroses Dependent on Errors of Internal Secretion of Ductless Glands, *Med. Rec.*, June 29, 1912.

Waller, H. E.: Relationship of Thyroid to Other Internal Secretions of Sexual Origin, *Practitioner*, August, 1912.

Fleischmann, P.: Interrelation Between Glands with Internal Secretion, *Med. Klin.*, Feb. 4, 1912.

Schwachtgen, G. B.: Internal Secretions with Special Reference to Islets of Langerhans of Pancreas, *Illinois Med. Jour.*, February, 1912.

Chvostek, F.: The Constitution and Glands with an Internal Secretion, *Wien. med. Wchnschr.*, Jan. 4, 1912.

Schittenhelm, A.: Disintegration of Albumin, Anaphylaxis and Internal Secretion, *Deutsch. med. Wchnschr.*, March 14, 1912.

Denison, H. S.: Harmonic Equilibrium of Glands of Internal Secretion, *Colorado Med.*, March, 1912.

Scherbak, A. L.: The Internal Secretion of the Mammary Glands, *Wien. med. Wchnschr.*, Feb. 1, 1912.

Opie, E. L.: What is Internal Secretion? *Interstate Med. Jour.*, May, 1912.

Morat, J. P.: The Internal Secretion and the Nervous System. *Lyon Méd.*, Sept. 24, 1911.
Neuburger, M.: Early History of Theory of Internal Secretions. *Wien. med. Wchnschr.*, Sept. 28, 1911.
Williams, L.: Therapeutic Promise of Internal Secretions, *Practitioner*, November, 1911.

ARTICLES ON TREATMENT OF ASTHMA

To the Editor:—Please publish a list of your recent articles on the treatment of asthma.

A. H. STAPLES, M.D., Washington, D. C.

ANSWER.—The following articles may be consulted:

Herrick, W. W.: Eosinophilia of Bronchial Asthma, THE JOURNAL Dec. 2, 1912, p. 1836.
Horn, Henry: The Bronchoscopic Treatment of Bronchial Asthma, THE JOURNAL, Sept. 10, 1910, p. 930.
Meltzer, S. J.: Bronchial Asthma as a Phenomenon of Anaphylaxis, THE JOURNAL, Sept. 17, 1910, p. 1021.
Hall, J. N.: Prolonged use of Epinephrin in Asthma, THE JOURNAL, July 9, 1910 p. 128.
Cohen, S. S.: Pituitary Extracts in Hay-Fever, Asthma, etc., THE JOURNAL, May 28, 1910, p. 1803.
Freudenthal, W.: Further Experience with Endobronchial Therapy of Asthma, THE JOURNAL, Sept. 21, 1912, p. 1108.
Matthews, J.: Relation of Nasal Conditions to Asthma, THE JOURNAL, Sept. 21, 1912, p. 1107.
Stadler, E.: Asthma, *Med. Klinik*, Jan. 26, 1913, abstr., THE JOURNAL, March 8, 1913, p. 791.
Koessler, K. K.: Bronchial Asthma Due to Hypersusceptibility to Hen's Eggs, *Ill. Med. Jour.*, January, 1913, abstr., THE JOURNAL, Feb. 1, 1913, p. 399.
Stauber, C.: Asthma, *München. med. Wchnschr.*, Jan. 21, 1913, abstr., THE JOURNAL, March 1, 1913, p. 706.
Chelmonski, A.: Pathogenesis of Asthma, *Deutsch. Arch f. klin. Med.*, 1912, cv, Nos. 5 and 6, abstr., THE JOURNAL, May 18, 1912, p. 1548.
Bonnier, P., Light Cauterization of the Nose in Treatment of Asthma, *Arch. gén. de méd.*, March, 1912, abstr., THE JOURNAL, May 4, 1912, p. 1401.
Kayser, C.: Calcium Salts in Treatment of Asthma, *Therap. Monatsh.*, March, 1912, abstr., THE JOURNAL, April 29, 1912, p. 1239.
Knopf, H. E.: Asthma in Children, *Berl. klin. Wchnschr.*, Aug. 12, 1912, abstr., THE JOURNAL, Sept. 28, 1912, p. 1226.
Levi, L.: Thyroid Treatment of Asthma, *Arch. gén. de méd.*, March, 1912, abstr., THE JOURNAL, May 4, 1912, p. 140.
McClanahan, H. M.: Management of Asthma in Children, *Am Jour. Med. Sc.*, June, 1912, abstr., THE JOURNAL, July 6, 1912, p. 68.
Ebstein, W.: Constipation as Factor in Asthma, *Deutsch. med. Wchnschr.*, Oct. 19, 1911, abstr., THE JOURNAL, Nov. 25, 1911, p. 1806.
Comby, J.: Asthma in Children, *Arch. de méd. des enf.*, October, 1911, abstr., THE JOURNAL, Nov. 18, 1911, p. 1727.
Moon, R. O.: Asthma in Children, *Med. Press and Circular*, July 9, 1911, abstr., THE JOURNAL, Aug. 19, 1911, p. 688.
Parker, H. R.: *Use of Antitoxin in Asthma*, *New York State Jour. Med.*, January, 1911, abstr., THE JOURNAL, Feb. 11, 1911, p. 457.
Beaudoux, H. A.: Some Suggestions and Personal Experience in Dealing with Hay-Fever and Asthma, *St. Paul Med. Jour.*, July, 1911, abstr., THE JOURNAL, July 29, 1911, p. 425.

TREATMENT OF MUCOUS COLITIS

To the Editor:—Kindly give me references which take up the subject of mucous colitis, especially the treatment, thoroughly and in detail. I have under my care a man who has, in addition to the intestinal condition, a symptom-complex that has been pronounced by several physicians a toxic neuritis. It seems that as the intestinal trouble improves the nervous condition also abates, and vice versa. If any work has been done which deals with the relationship of these conditions or any observations made on cases relative to the association of these two conditions, literature on these matters would be of especial interest to me.

W. H. GOECKERMANN, M.D., Milwaukee, Wis.

ANSWER.—We are giving below a list of references to this subject as obtained from our index for the past two years. Our correspondent will find the relations of intestinal diseases to neuritis discussed in the article of von Noorden, published in THE JOURNAL.

Von Noorden, Carl: Intoxication Proceeding from the Intestine, Especially Polyneuritis, THE JOURNAL, Jan. 11, 1913, p. 101.

We would suggest that text-books on diseases of the intestines be consulted with reference to the subject of mucous colitis.

Benjamin, A. E.: The Correlation of Appendicitis, Mucous Colitis and Membranous Pericolitis, Society Proceedings, THE JOURNAL, Jan. 11, 1913, p. 149.
Leriche, R.: Resection of Posterior Spinal Roots for Herpes, Mal-perforans, Hyperchlorhydria and Membranous Colitis, *Deutsch. Ztschr. f. Chir.*, November, 1913; abstr., THE JOURNAL, Jan. 11, 1913, p. 167.
Hernaman-Johnson, F.: Treatment of Mucous Colitis in Children, *Med. Press and Circular*, Nov. 15, 1912; abstr., THE JOURNAL, Jan. 6, 1912, p. 68.
Fike, C. C.: Mucous Colitis, *Ohio State Med. Jour.*, Oct. 15, 1911; abstr., THE JOURNAL, Nov. 18, 1911, p. 1724.
Noble, G. H.: Twenty-Seven Cases of Latero-Lateral Anastomosis of Ileum and Sigmoid Flexure for Chronic Mucous Colitis, *Texas State Jour. Med.*, October, 1911; abstr., THE JOURNAL, Nov. 4, 1911, p. 1566.
Conto, M.: The Fever with Mucous Colitis, *Deutsch. med. Wchnschr.*, April 17, 1913.
Daniel, P.: Primary Mucous Colitis, *Proctologist*, March, 1912.
Higgins, H.: Diagnosis and Treatment of Mucous Colitis and Spastic Constipation, *Practitioner*, London, February, 1912.
Mechling, C. C.: Mucomembranous Colitis, *Pennsylvania Med. Jour.*, May, 1912.

GANGRENOUS AND EROSIVE BALANITIS

To the Editor:—1. Please give references to any foreign literature, in the past five years, on gangrenous and erosive balanitis due to a specific germ.

2. Also give references to any literature on tuberculosis of the body of the uterus.

W. L. K., Kansas City, Mo.

ANSWER.—1. The following may be consulted:

Corbus, B. C.: Erosive and Gangrenous Balanitis, the Fourth Venereal Disease, THE JOURNAL, June 7, 1913, p. 1769. (Long bibliography largely of foreign articles.)
Tièche: Case of Gangrenous Balanitis, *Corr.-Bl. f. schweiz. Aerzte*, Dec. 20, 1912.
Romeo, P.: Erosive and Gangrenous Balanitis, *Gaz. d. osp.*, Oct. 4, 1910.

2. The following articles also may be consulted:

Stewart, M. J.: Two Cases of Tuberculosis of Uterus, *Glasgow Med. Jour.*, April, 1912; abstr., THE JOURNAL, May 18, 1912, p. p. 1547.
Keller, R.: Histologic Research on Route of Infection of Tuberculosis of Uterine Adnexa, *Arch. f. Gynäk.*, 1912, xcviii, No. 2.
Romeo, P.: Case of Tuberculosis of Body of Uterus, *Gaz. d. osp.*, Jan. 22, 1911.
Patel, M.: Treatment of Genital Tuberculosis in Women, *Rev. de gynéc. et de chir. abd.*, August, 1912.
Patel, M.: Treatment of Tuberculosis of Female Genital Organs, *Ann. de gynéc. et d'obst.*, 1912, xxxiv, Nos. 6 and 7.
Jung, P., and Engelhorn, E.: Experimental Research on Ascending Genital Tuberculosis, *Arch. f. Gynäk.*, xcii.
Horizontow, N. T.: Secondary Tuberculosis of the Female Genital Organs, *Zentralbl. f. Gynäk.*, Dec. 30, 1911; abstr., THE JOURNAL, Feb. 3, 1912, p. 383.
Sellheim, H.: Tuberculosis of the Female Genitalia, *München. med. Wchnschr.*, Aug. 1, 1911.
Kroemer, P.: Diagnosis of Tuberculosis of Female Genital Organs, *Deutsch. med. Wchnschr.*, June 8, 1911; abstr., THE JOURNAL, July 15, 1911, p. 254.
Poncet, A., and Leriche, R.: Inflammatory Tuberculosis of the Uterus and Adnexa, *Bull. de l'Acad. de méd.*, Paris, June 7, 1910; abstr., THE JOURNAL, July 16, 1910, p. 257.
Simmonds, M.: Tuberculosis of the Female Genitalia, *Arch. f. Gynäk.*, 1909, lxxxviii, No. 1; abstr., THE JOURNAL, May 22, 1909, p. 1725.
Martin, A.: Genital Tuberculosis, *Berl. klin. Wchnschr.*, Jan. 20, 1908; abstr., THE JOURNAL, Feb. 22, 1908, p. 650.
Kroemer, P.: Rarer Forms of Genital Tuberculosis in the Female, *Monatsschr. f. Geburtsh. u. Gynäk.*, November, 1907.

THYROID AND PARATHYROID GLANDS OF COWS

To the Editor:—Please state how and where to find the thyroid and parathyroid glands in a cow. What is the size and weight?

G. MES, M.D., Cullman, Ala.

ANSWER.—The following description is taken from Sisson's "Veterinary Anatomy," pp. 457 and 464.

"The Thyroid Gland (the horse).—The thyroid gland is a very vascular ductless gland, situated on the trachea close to the larynx. It is red-brown in color, and consists of two lateral lobes and a connecting isthmus.

"The lateral lobes are situated on either side of the first and second or second and third rings of the trachea, to which they are loosely attached. Each is about the size of a walnut, and has a convex superficial face which is related to the parotid gland and the omohyoid muscle, and a slightly concave, deep face, applied to the trachea.

"The isthmus in the adult horse is usually rudimentary. It may occur as a very narrow glandular band which connects the posterior extremities of the lateral lobes, extending across the ventral surface of the trachea, but it is frequently only a small strand of connective tissue, and sometimes is entirely absent. It may be represented by a small tail-like process of one lobe.

"The Thyroid Gland (the cow).—The lobes of the thyroid gland are more extensive and paler in color than in the horse, they extend further forward, overlapping the cricopharyngeus muscle to a small extent, and come in contact dorsally with the esophagus. They are flattened and have an irregular lobulated surface. In the young subject, the isthmus is well developed, being about half an inch in width.

"Accessory thyroids may be found, and parathyroids also occur near the posterior extremity or inner surface of the lateral lobes of the thyroid."

TREPHINING OPERATION FOR GLAUCOMA

To the Editor:—Please give references to the original article describing Elliot's trephining operation for glaucoma, and some subsequent literature on the subject.

Frederick T. Clark, M.D., Westfield, Mass.

Answer.—The earliest article we can find on this subject is:

Elliot, R. H.: Simple Trephining in Glaucoma: *Indian Med. Gaz.,* July, 1910.

The following more recent articles may be consulted:

Elliot, R. H.: Newer Operations for Glaucoma, *Ophthalmoscope,* viii, 684; Operation of Simple Trephining of the Sclera for the Relief of Glaucoma, *Ophthalmoscope,* April, 1911.

Stephenson, S.: Acute Glaucoma Successfully Treated by Operation of Trephining the Sclera, *Lancet,* London, Oct. 21, 1911.

Fox, L. W.: Modified Trephine for Fergus-Elliot Operation in Glaucoma, *Ophth. Rec.,* December, 1912.

Bettremieux: Simple Sclerectomy in Glaucoma, *Ophthalmology,* April, 1912.

Bettremieux: Iridectomy and Sclerectomy in Glaucoma, *Ophthalmology,* April, 1912.

Terson, M. A.: Hemorrhagic Glaucoma, Sclerectomy, *Ophthalmology,* April, 1912.

MINERAL OIL AS A REMEDY FOR CONSTIPATION

To the Editor:—I have often thought of using a mineral oil as an anticonstipation remedy. The idea is that it will not be absorbed. *I should like to know:*

1. What is paraffin oil or white mineral oil? I believe there is a commercial product by that name.
2. Is that what is used?
3. What is the difference between it and Liquid Albolene or liquid petrolatum?
4. Please refer me to literature on the subject.

M. M. Martinson, M.D., Graysville, Tenn.

Answer.—1. Paraffin oil or white mineral oil is a term used for a purified petroleum. So far as we know, the terms are not proprietary.

2. This material is used to some extent as a remedy against constipation.

3. The terms "white mineral oil" and "liquid petrolatum" are synonyms—"liquid petrolatum" being the official name. Liquid Albolene is a proprietary name for a preparation essentially equivalent to liquid petrolatum.

4. The literature on this subject, so far as it exists, must be concealed under general titles such as "Treatment of Constipation." Reference to its use is found in some text-books.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

BENEFITS OF THE BRITISH INSURANCE ACT

Under this title Hon. Albert Halstead, U. S. Consul at Birmingham, England, discusses the effects of the British Medical Insurance Act in the *Daily Consular and Trade Reports.* Mr. Halstead's comments are limited to his own district, but may be fairly applied to the entire area covered by the Insurance Act. Mr. Halstead says:

The medical benefits provisions of the British national insurance act became effective Jan. 1, 1913, and with the end of the first quarter on March 31 some details of the working of this act became available. In the Birmingham area, over which the Birmingham Health Committee has jurisdiction, it was calculated that up to Oct. 29, 1912, there were 289,801 insured persons. For services during the first quarter of 1913 the aggregate due the doctors in the Birmingham area was $98,791.81. The total account rendered by druggists amounted to $35,394.05 and the total number of prescriptions was 234,344.

THE GLASS-BOTTLE TRADE IN RELATION TO THE INSURANCE ACT

Under the insurance scheme, for an 8-ounce bottle of medicine a pharmacist is allowed 2d. (4 cents) as a dispensing fee, and for a bottle over 8 ounces 3d. (6 cents). An extra charge is made for the drugs as explained elsewhere, and the prices allow the druggist about 30 per cent. profit. For a medicine bottle up to 8 ounces the druggist is permitted to charge 1d. (2 cents) and 2d. (4 cents) for a larger one, but on the return of the bottle in a clean condition must refund this charge. For poison bottles no charge is made to the insured patient, but the government pays 1d. for 4-ounce bottles and smaller, and up to 4d. for 20-ounce bottles. It happens, however, that the half-pint spirit or whisky bottle is frequently brought for medicine because it holds just 8 ounces. It has been said that the demand for the 10-ounce bottle was largely increased by the fact that the druggist obtained 1d. extra as a dispensing fee for it, but it appears that doctors are somewhat inclined to prescribe a 10-ounce bottle of medicine because, in half-ounce doses, it provides for practically a week's medicament at three doses a day.

The bottles in use in this district are all graduated and those used for filling prescription under the insurance act are of cheap quality, bottles being used that are just good enough to hold the medicine. The bottles are almost all of British origin, and prices have had a tendency recently to advance a little. Dealers are keen to get the best prices possible, but would not object to bottles of foreign origin. The greater number of dealers are located in London, and American manufacturers of bottles who seek to enter the British market would do well to get in touch with some of the large London agencies.

It is quite customary in the better-class trade for the name of the druggist to be blown into the bottle. The druggist buys a name plate for about $1.25, and the manufacturer blows the name into the bottles free of charge provided the order given is a reasonably large one.

EFFECT ON TRADE IN PATENT MEDICINES

From 13,000,000 to 14,000,000 of a total population of 46,000,000 in the United Kingdom are affected by the insurance act, and many of these it appears, have been purchasers of patent or proprietary medicines. As a result of the act the demand for such patent and proprietary medicines has been reduced by about one-third. While it is thought likely that this will be a permanent result of the insurance scheme with its medical benefits, it is recognized that these benefits have been operative only a few months and that at the same time the patent and proprietary medicine manufacturers have done much less advertising. It may be that some of the falling off is due to to this lessening of advertising while the effects of the act were being studied; it has been stated that for the next year it is the purpose of most of the patent medicine makers to double their advertising. This would be on the assumption that after the novelty of the medical benefits is worn off there will be a tendency to return to former favorites, and at the same time there will remain some 32,000,000 people in the country who are not receiving medical benefits under the insurance act and whose custom is worth consideration.

EFFECT ON METHODS OF FILLING PRESCRIPTIONS

Prior to January 1 a considerable proportion of the workmen who are affected by this act belonged to friendly societies and were treated by club doctors. This scheme of medical attendance did not provide for the filling of prescriptions by druggists, and in most workmen's neighborhoods it became customary for the doctor not only to prescribe the medicine, but to dispense it as well. Thus the doctor had a surgery with a more or less restricted range of drugs on hand, and although in some cases experienced pharmacists were employed, in others the dispensing was done by the doctor himself or by members of his family. To meet the requirements of these doctors, wholesale druggists sprang up who had practically little trade with the pharmacists but a large trade with doctors. As a result of the new act these wholesale druggists have been compelled to change their trade and to seek trade with pharmacists, as the doctors, except in remote country places where there are no druggists, no longer dispense medicines.

It has also become more and more customary for certain firms to put up tabloids intended for specific diseases and for doctors to prescribe such medicines. As these remedies are not included in the British Pharmacopeia the insurance doctors are no longer prescribing them, and it has been suggested that doctors in the future will have to know more about the compounding of prescriptions than in the past. They will have to depend on their own knowledge of drugs instead of on that of the expert chemists of the wholesale druggists. On the other hand it is noted that the act is still in its infancy, and only about 28 per cent. of the population of England is affected thereby.

THE RIGHT OF A CITY TO REGULATE ITINERANT DOCTORS

A number of inquiries have recently been received regarding the right of a city to regulate or prohibit traveling "doctors" who make a practice of visiting the town for a few days at more or less regular intervals. It is well known in the medical profession that these men are generally graduates of low-grade schools, who have failed to make a living in legitimate practice and who, posing as "celebrated specialists" hope to take advantage of the ignorance of the people in the smaller towns and rural communities. As to their professional standing there is no question, they have none. Their legal standing is, however, a different matter. Speaking generally, a city has, under its inherent powers of police, the right to ordain ordinances for the preservation of the health and welfare of its citizens. Such a right is, of course, subject to the limitations of each municipal charter and to constitutional limitations.[1]

In Illinois:

> The city council in cities, and the president and the board of trustees in villages shall have the following powers:
>
> 76. To appoint a board of health and prescribe its powers and duties.
>
> 77. To erect . . . hospitals . . . etc.
>
> 78. To do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease.[2]

Power to license, tax, etc., itinerant merchants, etc.: "The city council in cities and the president and board of trustees in villages and incorporated towns shall have power to license, tax, regulate, suppress or prohibit itinerant merchants and transient vendors of merchandise."[3]

Under Section 62, Subdivision 78, and under Section 62a, it would seem that a city could impose a reasonable license fee on itinerant physicians. The Illinois medical practice act had a clause regulating itinerant physicians which was declared unconstitutional, being held class legislation.

Such a measure must be so drafted as to meet this difficulty. Any fee levied must be reasonable, and a city can not necessarily prohibit when it simply has the power to regulate.

There is a case on record in which the court held that a city may prohibit an occupation or the like that is plainly detrimental to the public health without a specific grant in its charter; but when there are limitations of this nature (charter) care must be exercised not to overstep them.

SENATOR OWEN INTRODUCES BILL

Senator Owen introduced on July 10, Senate Bill 2722, providing for inspection by officers of the U. S. Public Health Service of all vessels, vehicles, trains, depots, etc., used in interstate commerce. The bill was referred to the Senate Committee on Public Health and National Quarantine. The text for the bill follows:

> *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.* That the officers of the Public Health Service may enter on the property of all common carriers when engaged in interstate commerce for the purpose of ascertaining whether the vessel, vehicles, trains, carriages, or conveyances of any and every kind, and depots, premises, and property of every description belonging to such carriers, are, while such carriers are engaged in interstate commerce, kept by them in a sanitary condition. And the Secretary of the Treasury is authorized to make all such reasonable rules and regulations as may be necessary to secure the keeping of such vessels, vehicles, trains, carriages or conveyances, and depots, premises and property of every kind, in a sanitary condition by such carriers while engaged in interstate commerce, and to direct, through the Solicitor of the Treasury, the institution of all such legal proceedings in the district courts of the United States as may be necessary to compel the observance of such rules and regulations by said carriers.

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[1] Dillon: Municipal Corporations, Sections 661 and following.
[2] Chapter 24, Ill. Rev. Stat., 263, Art. 5, Sec. 62.
[3] Chapter 24, Ill. Rev. Stat., 263, Art. 5, Sec. 62a.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: San Francisco, August 5-8. Sec., Dr. Charles B. Pinkham, 135 Stockton St., San Francisco.

NEBRASKA: Lincoln, August 13-14. Sec., Dr. C. P. Fall, Beatrice.

Florida May Report

Dr. J. D. Fernandez, secretary of the Florida State Board of Medical Examiners, reports the written examination held at Jacksonville, May 12-13, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 92 of whom 61 passed and 31 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Alabama	(1894) 75; (1910) 78; (1911)	77, 90; (1912) 76.
Georgetown University	(1903)	80
Howard University, Washington, D. C.	(1912)	78
University of Georgia	(1899) 75; (1912)	75
Atlanta College of Physicians and Surgeons	(1908) 84; (1913)	75, 81, 81, 81, 82, 85, 93.
Atlanta Medical College	(1888) 75; (1891)	76
Atlanta School of Medicine	(1910) 79; (1913) 75, 80, 82,	86
Chicago College of Medicine and Surgery	(1912)	84
College of Physicians and Surgeons, Chicago	(1903)	77
American Medical Missionary College	(1910)	85
Rush Medical College	(1907)	90
Hering Medical College	(1897)	80
Coll. of Med. and Surg., Physio-Medical, Chicago	(1911)	77
University of Louisville	(1909)	91
Northwestern University Medical School	(1902)	91
Louisville and Hospital Medical College	(1908)	78
Tulane University of Louisiana	(1912)	91
Medical School of Maine	(1901)	75
College of Physicians and Surgeons, Baltimore	(1911)	81
University of Michigan, Dept. of Med. and Surg.	(1907)	82
Missouri Medical College	(1876) 75; (1883)	79
St. Louis University	(1904) 83; (1910) 86; (1911)	81
University and Bellevue Hospital Medical College	(1900)	90
Columbia University, College of Phys. and Surg.	(1901)	81
Bellevue Hospital Medical College	(1885)	81
North Carolina Medical College	(1913)	82
Eclectic Medical Institute, Cincinnati	(1896)	79
Jefferson Medical College	(1911)	87
Medical College of the State of South Carolina	(1912)	79
Meharry Medical College	(1912) 75; (1913)	77, 82
Universities of Nashville and Tennessee	(1910)	75
University of the South	(1894)	75
Vanderbilt University	(1912)	83
University of West Tennessee	(1913)	75
University of Virginia	(1907) 81; (1909)	88
Medical College of Virginia	(1908)	88
University of Toronto, Ontario	(1909)	75
University of Naples, Italy	(1907)	75

FAILED

College	Year Grad.	Per Cent.
University of Georgia	(1911)	52
Atlanta College of Physicians and Surgeons	(1904) 48; (1910)	61
Atlanta Medical College	(1897)	50
Southern Medical College, Atlanta	(1882)	40
Atlanta School of Medicine	(1911) 65; (1913)	69
Southern College of Medicine and Surgery, Atlanta	(1912) 40, 69; (1913)	64, 64.
Metropolitan Medical College	(1899)	67
College of Physicians and Surgeons, Keokuk	(1898)	57
Kentucky School of Medicine	(1889)	50
University of Louisville	(1886)	32
Louisville and Hospital Medical College	(1884)	45
Hospital College of Medicine, Louisville	(1890)	39
Maryland Medical College	(1912)	68
Tufts College Medical School	(1895) 54; (1910)*	64
St. Louis College of Physicians and Surgeons	(1905)	62
American Medical College, St. Louis	(1911)	68
University of Buffalo	(1901)	63
Leonard Medical School	(1911)	62
Medical College of the State of South Carolina	(1912(	60
Memphis Hospital Medical College	(1903) 51; (1911) 50; (1912)	50.
Meharry Medical College	(1913)	56
Vanderbilt University	(1894)	53
University of Havana, Cuba	(1912)	65

* Graduation not verified.

The following questions were asked:

ANATOMY

1. Give the origin, main branches and relations of the axillary artery. 2. Name the subdivisions of the alimentary canal, and give the name and location of the various glands found in the small intestines. 3. What is contained in the middle mediastinum? 4. Describe the knee-joint, giving bones entering into its formation, cartilages, ligaments and nerve- and blood-supply, and actions. 5. What is the fissure of Sylvius and what artery does it contain?

6. What bones enter into the formation of the orbital cavities? 7. Give origin, insertion and action of the gracilis muscle. 8. Name the ductless glands. 9. What muscles, arteries and nerves would be severed in a cross-section of the middle of the humerus? 10. Give origins, course and distribution of the pneumogastric nerve.

PHYSIOLOGY

1. Give the three main forces causing venous circulation. 2. Name the ganglia of the heart. 3. Give physiology of respiration. 4. Give physiologic reasons for coughing; yawning; sneezing. 5. What is meant by intrathoracic pressure; respiratory pressure. 6. Give physiology of micturition. 7. Define secretion; excretion. Give example of each. 8. Define the action of the heart. 9. Give the function of the spinal cord. 10. Name tracts of descending degeneration of the spinal cord.

SURGERY

1. Give treatment for compound fracture of tibia and fibula. 2. Describe Colles' fracture and give treatment. 3. What is gastro-enterostomy? Describe the operation, and mention conditions requiring it. 4. Define proctoclysis. Describe its uses and mode of administration. 5. Define coxalgia and give treatment. 6. Give symptoms and treatment of strangulated hernia. 7. Give diagnosis and treatment of aneurysm of the popliteal artery. 8. What are the symptoms of floating kidney? Describe an operation for its correction. 9. Give indications and technic for paracentesis of membrana tympani. 10. Describe the operation of lumbar puncture in detail.

GYNECOLOGY

1. Define menstruation; vicarious menstruation. 2. Define pelvic cellulitis. 3. Define and give treatment of mastitis. 4. Define and give treatment of subinvolution; eversion of uterus. 5. What are the most frequent complications of the gestation period? The puerperal period? 6. Give the principal causes and treatment of sterility in women. 7. Give causes and treatment of vesicovaginal fistula. 8. Give causes and treatment of uterine hemorrhage occurring after menopause. 9. How would you diagnose malignancy in the uterus or cervix? 10. When and how is a lacerated cervix best repaired?

MATERIA MEDICA—THERAPEUTICS

1. If necessary to reduce temperature, what remedies do you use? Explain how they act. 2. What remedies would you give to correct anemic conditions? 3. Oleum tiglii. Give properties and uses. 4. Name the principal alkaloid of belladonna. Indication for its use. 5. Why should you prescribe the salts of the alkaloids instead of the alkaloids themselves? 6. What change is liable to take place in morphin after being kept in solution for some time? 7. Called to a case of sudden collapse, what is the quickest and most efficient remedy? Give its mode of administration. 8. Give the physiologic action of ergot and mention its therapeutic use. 9. At what two periods in intermittent fever would you prescribe quinin to produce the best results, and in what doses? 10. What chemical antidote would you prescribe, called to a case of carbolic acid poisoning?

OBSTETRICS

1. Define the term "ectopic gestation," and describe symptoms and treatment. 2. Describe two forms of vicious insertion of the placenta and give differential symptoms of each. 3. What precautions should be taken to prevent the occurrence of trismus nicentium? 4. Describe the management of breech presentations. 5. Describe, in detail, the symptoms and treatment of puerperal infection. 6. Enumerate the conditions which would justify artificial abortion. 7. Describe the operation of cesarean section. 8. Describe the symptoms and best methods of arresting post-partum hemorrhage. 9. In what class of cases should the pelvimeter be used? 10. Describe ophthalmia neonatorum, and give its proper treatment.

CHEMISTRY

1. What takes place when the two needles of a galvanic current are inserted into the human body? 2. Define chemically; an acid, a base, a salt. 3. What are the physical properties of sulphur? And why is it burned in the presence of water for disinfecting purposes? What is formed by burning sulphur in the presence of water, and how much is necessary for each 1,000 cubic feet of air space? 4. How would you test alkaline urine for specific gravity, albumin, sugar, and carbolic acid? 5. Give in symbols the reaction of nitrate of silver and its antidote. Also give symptoms of chronic silver poisoning. 6. What is the difference between mercuric chlorid and mercurous chlorid? 7. What is the difference between a chlorate and a chlorid? 8. What is the difference between methylic alcohol and ethylic alcohol? 9. Why is ferric hydrate an antidote for arsenic poisoning? How is it freshly prepared? Give formula of the reaction. 10. How can you distinguish poisoning from antimony and poisoning from arsenic?

North Carolina June Report

Dr. Benjamin K. Hays, secretary of the North Carolina State Board of Medical Examiners, reports the written examination held at Morehead City, June 10, 1913. The number of sub-
jects examined in was 14; percentage required to pass, 80, and not less than 35 in any one branch. The total number of candidates examined was 112 of whom 77 passed, 34 failed and 1 withdrew. Twenty-five candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined
George Washington University	(1911)	1
Howard University, Washington, D. C.	(1911)	2
Chicago College of Medicine and Surgery	(1913)	1
University of Maryland	(1904, 1) (1913, 6)	7
Johns Hopkins University	(1913)	2
Maryland Medical College	(1913)	1
College of Physicians and Surgeons, Boston	(1912)	1
Columbia Univ., College of Phys. and Surg.	(1913)	3
North Carolina Medical College	(1912, 2) (1913, 21)	23
Leonard Medical School	(1910, 1) (1913, 5)	6
Jefferson Medical College	(1911, 1) (1913, 5)	6
University of Pennsylvania	(1912, 1) (1913, 5)	6
Vanderbilt University	(1913)	2
University of Texas	(1906)	1
Medical College of Virginia	(1912, 1) (1913, 3)	4
University College of Medicine, Richmond	(1913)	8
University of Virginia	(1911, 1) (1913, 2)	3

FAILED

College	Year Grad.	Total No. Examined
Howard University, Washington, D. C	(1911)	1
Hospital College of Medicine, Louisville	(1904)	1
University of Maryland	(1912)	2
College of Physicians and Surgeons, Baltimore	(1910)	1
Leonard Medical School	(1911, 1) (1912, 2) (1913, 9)	12
North Carolina Med. Coll.	(1905, 1) (1912, 2) (1913, 4)	7
Medico-Chirurgical College of Philadelphia	(1912)	1
Temple University	(1912)	1
Medical College of the State of South Carolina	(1912)	1
University of Tennessee	(1910) (1912)	2
Chattanooga Medical College	(1908)	1
Meharry Medical College	(1912)	1
Medical College of Virginia	(1913)	2
University College of Medicine, Richmond	(1912)	1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Hospital Medical College, Atlanta	(1911)	Tennessee
College of Physicians and Surgeons, Indianapolis	(1887)	Indiana
University of Louisville	(1911)	Kentucky
Tulane Univ. of Louisiana. (1905) (1907) (1910)	(1911)	Louisiana
University of Maryland. (1908) South Carolina;	(1910)	Maryland
Johns Hopkins University	(1910)	Maryland
College of P. and S., Baltimore	(1908)	W. Virginia
Albany Medical College	(1894)	New York
Starling Medical College	(1892)	Penna.
Jefferson Medical College	(1911)	Delaware
University of Pennsylvania (1902) Pennsylvania; (1911) Maryland; (1911) New York.		
Medico-Chirurgical College of Philadelphia	(1906)	Georgia
University of the South. (1904) South Carolina;	(1906)	Tennessee
University of Tennessee	(1894)	Tennessee
Vanderbilt University	(1899)	S. Carolina
Medical College of Virginia	(1911)	Virginia
University College of Medicine, Richmond (1908) Virginia; (1909) Florida.		

The following questions were asked:

ANATOMY, PATHOLOGY, HISTOLOGY AND BACTERIOLOGY

1. Locate and describe the cecum. 2. Give origin, course and distribution of the seventh nerve. 3. Describe the right and left subclavian veins. 4. Describe the diaphragm, its principal openings and nerve-supply. 5. Describe the mastoid portion of the temporal bone and name the muscles attached thereto. 6. Name the ligaments of the hip-joint. 7. Relate the difference between a virgin uterus and the uterus of a multipara. 8. What anatomic parts are involved in the descent of the testes? 9. Describe the lesion found in the different forms of cirrhosis of the liver. 10. Give the gross pathology of amebic dysentery. Describe the organism giving rise to it and name the pathologic condition of the liver often associated with it.

Answer only eight questions.

PHYSIOLOGY AND HYGIENE

1. What do you consider the chief difference in the function of epithelial and connective tissue? 2. Name classes of foods. Which of these is alone capable of sustaining life? What chemical element is usually spoken of as the chief characteristic of this one? What per cent. of the molecule is composed of this element? In the form of what substance is this element chiefly eliminated? Where is this substance formed? 3. Name enzymes found in alimentary canal and give place found and function. 4. Give classification of white blood-corpuscles and per cent. of each found in normal blood. 5. What is the fluid in muscle tissue called? What is its chemical reaction? How is this affected by fatigue? By death? Explain. 6. Trace circulation of blood through kidney: 7. Define wallerian degeneration. 8. Give distribution of pneumogastric nerve and function in each locality. (That is, state class of nerve in each locality.) 9. What is the significance of colon bacilli in drinking water.

MATERIA MEDICA AND THERAPEUTICS

1. Mention the conditions which affect the dosage of medicines Name the methods of introducing medicines into the circulation. 2. Give the physiologic action of saline purgatives and their thera-
peutic uses. 3. Name the three most used preparations of opium and state how much of each represents one grain of opium. Explain the constipating action of opium. 4. Name an antidote for each of the following, and state whether this is physiological or chemical: arsenic, opium, copper and strychnin. 5. State what remedies are used to reduce temperature. Explain how they accomplish this result, and describe how used. 6. What drugs would you use to stimulate the heart's action, to produce emesis, to control hemor-
rhage, to produce sleep, to relieve pain. Doses of each. 7. Name several drugs that render urine alkaline. Give their doses. What class of acids would you use to acidify alkaline urine? Give an example. Give the composition of linimentum calcis and thera-
peutic uses. 8. What is incompatibility in medicine, and what are the different kinds of incompatibles? Give an example of each. This examination counts 80, oral 20.

CHEMISTRY AND DISEASES OF CHILDREN

1. Describe the process of manufacture of chloroform, ether and nitrous oxid, and express in equations the reactions respectively occurring in their formation. 2. Review briefly the theory of ions or of electrolytic dissociation. 3. The composition of normal urine represents the approximate equilibrium between the acidic and the basic end-products of metabolism. Name several food-substances which contribute to the establishment of acid conditions, and several others which contribute, in like degree, to the establishment of basic conditions. 4. What two sugars are especially concerned in the anabolism of the tissues? What organ converts levulose and lactose into glucose? How would you determine the limit of assimilation of the various sugars? 5. What are fats chemically? In what two ways do fats form in the organism? How is the composition of the fats of the diet affected in the process of digestion and assimilation? What is the significance of excessive unresolved fat and of fatty acid crystals in the feces? What is the final fate of the fat in the body? 6. State the general plan of the enzymotic hydrolysis of the protein molecule, and designate the form which the resulting products must assume prior to absorption and nutrification. 7. Discuss the properties, the relative merits, and the indications for using the various carbohydrates in infant-feeding. 8. Discuss the question of high protein feeding in children with particular reference to (*a*) indications for its use, (*b*) the chemical and physical changes resulting in the feces, and (*c*) its influence over general metabolism. 9. Describe Kernig's and Babinski's reflexes, and give their respective diagnostic value. 10. Describe congenital atelectasis, and state the best method of remedying the condition. Answer any six of the foregoing questions. The equivalent of four other questions will be given orally and by laboratory process.

GYNECOLOGY AND OBSTETRICS

1. Source, composition and specific gravity of liquor amnii. 2. Discuss briefly the physiology of the transmission of insanity, feeble-mindedness or other mental or moral traits or characteristics, or physical defects, or characteristics from parent to offspring. Give Mendel's formula for heredity. 3. What constitutes the pelvic floor? 4. What are some of the indications for producing sterility in a woman and describe the proper operation. 5. Differentiate uterine polypus and chronic inversion of the uterus, and give proper treatment in each case. 6. (*a*) What is the normal course of delivery in occipitoposterior position? (*b*) In case the normal course is not followed what is the method of delivery? (*c*) And in the latter case what is the percentage of mortality to mother and child? 7. (*a*) What are some of the diseases of the breast liable to occur during the puerperium? (*b*) What is the treatment for each? (*c*) What prophylactic measures should be instituted? 8. (*a*) State some of the indications, and (*b*) describe what you consider the best operation for emptying the uterus at the second month of uterogestation, (*c*) at the sixth month. Answer only six questions. This written examination counts 60. The practical examination counts 40.

PRACTICE OF MEDICINE

1. What is aphasia? (*a*) What is the difference between sensory and motor aphasia? (*b*) Where is the central lesion in motor aphasia located? 2. What is multiple neuritis? (*a*) Give etiology, diagnosis and prognosis. 3. What is diabetes? (*a*) What are the modern theories concerning its etiology? (*b*) Discuss the carbohydrates in the treatment. 4. Describe briefly the character and situation of pain in gastralgia, ulcer of the stomach, lead colic, general peritonitis, appendicitis, gall-stone colic and kidney colic. 5. What are the chief causes of secondary anemia? (*a*) How would you differentiate secondary anemia from primary pernicious anemia? 6. Define aneurysms. How may they be classified? (*a*) How would you differentiate between aneurysm of the ascending and transverse aorta? 7. What are the chief causes for obstruction of the common bile-duct producing jaundice? (*a*) Give the clinical manifestations produced by obliteration at Vater's ampulla. 8. Define pellagra. (*a*) Give the clinical history. (*b*) Give the most recent treatment, and the mode of administration. This paper valued at 80, oral at 20.

SURGERY

1. Name every disease or condition (occurring to you) involving the genito-urinary tract, which might produce hematuria. 2. Describe the operative technic of a resection of the elbow joint, naming the important structures to avoid. 3. Name (*a*) the varieties of dislocation of the shoulder joint; (*b*) diagnostic symptoms of a subcoracoid; (*c*) technic of reduction of a subcoracoid. 4. Give the surgical guides for the location of the lingual artery, for the purpose of ligation. 5. How would you treat a compound fracture of the tibia at its middle third? 6. Give symptoms and treatment of an osteomyelitis of the tibia. 7. Define (*a*) chancroid, or soft chancre. (*b*) How would you treat a chancroid or soft chancre of the penis? (*c*) What is its incubation period? 8. Describe the operative technic of a tracheotomy. The maximum for this examination will be 80. The maximum for the oral examination will be 20.

Illegal Practitioners.—Successful prosecution of illegal practitioners of medicine depends first of all on the disposition of the authorities to prosecute. There are exceptions, but as a rule our courts are ready and willing to get in behind genuine fakers who are violating the medical practice act, if anything like proper evidence is forthcoming. Officers have long since learned that it does not pay to arrest alleged violators of any law merely on suspicion, unless a real crime has been committed. It is not sufficient to believe or even to know that a law has been violated, there must be positive proof before the courts can afford to convict.—*Texas State Med. Jour.*

Book Notices

OPHTHALMIC SEMEIOLOGY AND DIAGNOSIS. By Charles H. Beard, M.D., Surgeon to the Illinois Charitable Eye and Ear Infirmary. (An International System of Ophthalmic Practice. Edited by Walter L. Pyle, A.M., M.D.) Cloth. Price $4 net. Pp. 400 with 84 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

While there are all sorts and conditions of works on the eye and its diseases—in particular, text-books without number—it has remained for an American to write an acceptable, indeed the only monograph on the all-important subject of ocular symptomatology and diagnosis. To the uninitiated, treatment seems to be the end and aim of study, and while ophthalmic therapy is by no means to be forgotten, yet surely the essentials of therapeutics lie in semeiology. In his search for the "practical" side of medicine the American is prone to rush ahead to the treatment of his patient without due regard to the importance of deciding exactly what *is wrong with him*. This tendency may well be corrected by the perusal of a book that considers, in the original and readable fashion characteristic of Beard's writings, the etiology and diagnosis of ocular affections, without a word about their therapeutic conduct. Such a volume assists in restoring the diagnostic element in ophthalmology to its proper perspective. In his introduction Beard deals fully and effectively with the histology of the parts involved, a matter of importance in gaining a rational acquaintance with the symptomatology of eye diseases. Passing to the objective examination, he very properly insists on the examination of both eyes "no matter if the patient positively affirms that only one eye is at fault." Beginning with the eyelids Beard carefully considers the whole anterior ocular apparatus, especially from the regional and anatomic points of view—dealing incidentally only with the subjective symptoms. Of the nineteen chapters that constitute the whole work the most interesting is that relating to the pupil. Of particular value is the scheme that shows the effect on the pupils and its reflexes, as well as the vision, of lesions situated along the course of the ocular nerves. A chapter is devoted to the consideration of cataract, and some order is brought out of chaos by the adoption of classification by age, cause, consistency, color, extent, seat and disposition of opacities, complications, the period of development and its anatomic relations. As Beard is not only an ophthalmologist of reputation but a fundus artist of high rank, it is not strange that this book should exhibit some of the most faithful ophthalmoscopic illustrations we have seen. The work is one to be studied and read a number of times by ophthalmologists instead of being merely added to the library as a book of reference.

THE SURGICAL DISEASES OF CHILDREN. By William Francis Campbell, A.B., M.D., Professor of Anatomy, Long Island College Hospital, and LeGrand Kerr, M.D., Attending Pediatrist to the Methodist Episcopal, Williamsburgh, Bushwick and Swedish Hospitals. Cloth. Price, $2. Pp. 693, with 271 illustrations. New York: D. Appleton & Co., 1912.

This book is dedicated "to the family physician on whose conscientious care and devotion to human welfare depends the efficiency of future men and women." This dedication indicates the chief object of the work, which, in addition to being of high value to the surgeon for its clear-cut indications and directions for surgical interference, should be of still greater value to the family physician who has the primary observation of the little patients and whose alertness in recognizing the beginnings of surgical diseases in children may be of the greatest service in the saving of life and limb. The authors are particularly and properly forceful in their teaching that the surgery of childhood deals with growing bodies, complex organisms, and must be done with a full knowledge of technic plus that of "nutrition, development and future efficiency." The first sections of the book devoted to the qualifications of the pediatric surgeon, the expression of disease in the young child and examination are particularly complete and worthy of studious consideration. There is little fault to be found with the sections on regional surgery. In general, descriptions are clear, indications for operation well chosen and the surgical teaching sound. In a very few instances subjects are given rather meager consideration, but the general excellence of the book is such that these may be overlooked. The volume is freely illustrated and in its typography reflects credit on the publishers. It is a valuable addition to the library of both general practitioner and surgeon.

Bovine Tuberculosis and Its Control. By Veranus Alva Moore, B.S., M.D., V.M.D., *Professor of Comparative Pathology, New York State Veterinary College.* Cloth. Price, $2 net. Pp. 205 with 30 illustrations. Ithaca, N. Y.: Carpenter & Co., 1913.

There are few problems in bacteriology which have been investigated with so much intensity as the problem of the transmission of tuberculosis from cow to man, especially through the medium of milk. The important work of Park and Krumwiede has illuminated the subject more than any other work, and there can be no doubt to-day about the transmissibility of tuberculosis through milk. With this certainty it becomes more important than ever to devise and carry out means for the eradication of tuberculosis from cattle. Moore's book, therefore, is timely and as far as we know the only book of its kind. The author takes a conservative stand when insisting that the eradication of tuberculosis among cattle should be gradual rather than forced suddenly on the cattle owner. Recognizing the reliability as well as the limitations of the tuberculin test, he advises the limiting of compulsory eradication of tuberculous cattle to those which can be detected by physical examination. The tuberculin test is to be applied only when specially solicited by the cattle owner, and its general use advocated at some future time. Stress is laid on the necessity of educating cattle owners both for public health and for economic reasons. The book treats the various subjects in an exhaustive manner. The history of tuberculosis in cattle, the distribution and the cause are subjects for the first three chapters. Attention is given to the methods of dissemination, as these really form the foundation for preventive measures. The Bang and Ostertag methods of eradication of tuberculosis in herds are given in detail and the success in Denmark and Germany discussed. A reprint of the report of the International Commission on the Control of Bovine Tuberculosis is given as an appendix. The clear and popular style of the book makes it particularly valuable. The producer of milk, the health officer, the packer and butcher and those interested in the artificial feeding of infants can learn much from a study of the book.

Diseases of Women. By Thomas George Stevens, M.D., B.S., F.R.C.S., Obstetric Surgeon, St. Mary's Hospital. London Medical Publications. Cloth. Price, $5.50. Pp. 431, with 202 illustrations. New York: Oxford University Press, 1912.

In this work the author has endeavored to present the subject-matter, comprising gynecology, on a pathologic basis, in the same manner as medicine and general surgery. In constructing this basis he has found it convenient to compromise between a purely pathologic and an anatomico-clinical classification. He regards the great improvements which have been made during recent years in treating female pelvic disorders as the practical results of applying general surgical principles on a sound pathologic basis. The opening chapters cover in a conventional way diagnosis, anatomy and the development and the malformations of the generative organs. The relation of obstetrics to gynecology is well expressed in two chapters given over to the pathologic effects of parturition and accidental injuries and the anomalies of pregnancy. The chapters are short and such subjects as surgical lacerations, hydatiform mole and extra-uterine gestation are necessarily briefly set forth. For laceration of the perineum a modification of the flap-splitting procedure is able described. Infections are too briefly considered and no effort is made at a modern classification with respect to the endometrium. Thus chronic endometritis is described as a disease *per se* and its cure is "to systematically scrape away the whole endometrium with a sharp curet." In retroflexio uteri, a form of the Gilliam operation is described. The value of the pessary in retrodisplacements and in procidentia is emphasized perhaps more than we are accustomed to in our American texts. Unusually appropriate chapters in a work of this nature are those given over to the urinary system in relation to gynecology and general conditions associated with pelvic disorders. The last three chapters are of marked importance, preparations for operation and technic, the after-treatment of operations, and the postoperative complications. Brevity and lucidity characterize each discussion. Many of the illustrations are photomicrographs, the larger ones unusually successful from the point of view of demonstration. The author has attempted in these to provide superior illustrations by a new method, that of direct photography on a plate exposed in the rays of the epidiascope. While not yet perfect, such photographs have yielded to reproduction so as to produce unusually clear illustrations. Altogether the volume forms a distinctive addition to the "London Medical Publications."

Clinical Laboratory Methods. A Manual of Technic and Morphology Designed for the Use of Students and Practitioners of Medicine. By Roger Sylvester Morris, A.B., M.D., Associate Professor of Medicine in Washington University, St. Louis. Cloth. Price, $3. Pp. 343, with 48 illustrations. New York: D. Appleton & Co., 1913.

This book deals only with methods and morphologic elements which are of diagnostic importance. Methods of proved value in the determination of the abnormal in urine, gastric contents, feces, blood, sputum and puncture-fluids are given in detail, and were evidently selected by one thoroughly familiar with methods and technic. The Wassermann test is omitted; this is strictly in keeping with the object of the book, as the average practitioner cannot hope to become proficient with this test. Likewise, chemical formulas and reactions are conspicuously absent — perhaps more so than is necessary. As a laboratory manual for the student or practitioner, the book can be highly recommended as a reliable guide.

Medicolegal

Performance of Operation on Unconscious Youth without Any Consent

(Luka vs. Lowrie (Mich.), 136 N. W. R. 1106)

The Supreme Court of Michigan affirms a judgment for the defendant, on a verdict directed in his favor in this case, where the plaintiff contended that his foot should not have been amputated at all, and more particularly that it should not have been amputated without first obtaining his consent or the consent of his parents, who went to the hospital as soon as possible after learning of his injury. The court says that the plaintiff, a boy 15 years of age, while crossing a railroad track was knocked down by an engine and his left foot was mangled and crushed. There was a compound disarticulation of the bones of the foot, and one of the principal bones of the arch, the "scaphoid" bone, was torn away entirely, the flesh was crushed and torn from the top of the foot, leaving the muscles, ligaments and bones exposed. The plaintiff testified: "I could see the bones sticking out. I could see they weren't broken. Don't know how many bones were sticking out; around four or five, something like that." Shortly after his injury, the plaintiff was removed in an ambulance to a hospital. He was partially conscious on his arrival and was able to communicate his name and the name of the street on which he lived to the attending surgeons. Within 10 or 15 minutes after his arrival, he lapsed into a comatose condition, and later into complete unconsciousness. Efforts to revive him by injections of strychnin and infusion of a saline solution were made, but he remained unconscious until after the operation.

Soon after his arrival at the hospital, at 10:15 a. m., the plaintiff's foot was examined by four house physicians connected with the hospital. They concluded that prompt surgical treatment was necessary and telephoned to the defendant, who was assistant surgeon of the railroad. The defendant arrived at the hospital at 10:45 a. m. On examining the plaintiff, he found him unconscious, with a weak pulse and dilated pupils. The foot was found to be cold and dead, the circulation having been interrupted. The defendant testified that he learned from the house surgeon the boy's name and residence street. With reference to the residence, he knew the distance from the hospital and the time it would take to get from there to the hospital; that he inquired of the house surgeon if any one, any relatives, were present, and was informed that no person was present whatever. After a consultation with the four house physicians, it was agreed by all that an immediate amputation was necessary to save the plaintiff's life. The foot was amputated and the plaintiff recovered.

The first question presented was whether it was necessary to amputate. Taking all the testimony on behalf of the plaintiff and considering it broadly, it amounted, at most, to this: That by following a different course the plaintiff's foot might have been saved. While the witnesses disagreed on some details, they apparently all agreed that the proper course for a surgeon to pursue, when confronted by such an exigency, is to consult with another or others, and then exercise the best judgment and skill of which he is capable. This seemed to have been the course followed by the defendant. The four house surgeons, after consultation with the defendant, concluded, with him, that an immediate operation was necessary to save the plaintiff's life.

Taking into consideration the condition in which the plaintiff was when the defendant reached him, the court has no hesitation in holding that the defendant was amply justified in treating it as a case of emergency, and his conduct should be viewed in the light of the legal principles governing such cases.

While the testimony offered on behalf of the plaintiff was insufficient, in the court's opinion, to raise a question of fact for the determination of the jury as to whether the defendant was guilty of negligence through an error in judgment, the plaintiff's case would not be aided even if that issue had been determined in his favor. In an ordinary action for negligence, the fact that the defendant has acted according to his best judgment is no defense. His act is to be judged by the standard of conduct of an ordinarily prudent man under the circumstances. In conduct resting on judgment, opinion or theory, however, a different rule has been recognized. It would be unreasonable to hold a properly qualified physician or surgeon responsible for an honest error of judgment, where, as in the instant case, he is called on to act in an emergency and must choose between two courses of action either one of which involves the possibility of the gravest hazard to the patient.

It is, the court thinks, very clear on this record that the question presented to the defendant, at the moment he was called on to act, was one of judgment only. Instant action of some sort was imperative. In reaching a conclusion as to the proper course to be pursued, the attending surgeon must necessarily be influenced by many considerations: The physical character of the wound, the fact that there was a compound dislocation of the bones of the foot, the entire absence of one of these bones, the stripping off of the flesh from the anterior part of the foot leaving the tendons bare and shiny, the fact that the foot had become wholly devitalized, the presence of hemorrhage, the danger from blood poisoning at the time or from future infection, the character and quantity of foreign matter, dirt, cinders, etc., in the wound. To a consideration of these matters must be added a careful attention to the general condition of the patient, the degree and cause of the existing shock, the apparent ability or inability of the patient to resist shock, the condition of the temperature, pulse and respiration, and the reaction or lack of it produced by the administration of stimulants. Called on to act under such circumstances and to determine which of two courses (one entailing certain mutilation and the other probable death to the patient) should be followed, it is apparent that the defendant was not bound by the ordinary rules of negligence, but was entitled to insist that, having used his best judgment, he was not liable.

There is nothing in this record to indicate that, had the parents of the plaintiff been present at the operating table, they would have refused their consent to the operation. Indeed, it is inconceivable that such consent would have been withheld in the face of the determination of five duly qualified physicians and surgeons that it was necessary to save the plaintiff's life. But the defendant testified, and in this he was not contradicted, that he made inquiry for relatives of the plaintiff and was told that none were in the hospital. Suppose that his informant was in error (which is not certain), the defendant had a right to rely on the information and to act in the emergency on the theory that to obtain consent was impracticable.

On the question involved in this case a valuable collection of authorities will be found in *Gillette vs. Tucker*, 93 Am. St. Rep. 657, note. See, also, 6 Cyc. 675; 30 Cyc. 1587.

The fact that surgeons are called on daily, in all our large cities, to operate instantly in emergency cases in order that life may be preserved, should be considered. Many small children are injured on the streets in large cities. To hold that a surgeon must wait until perhaps he may be able to secure the consent of the parents before giving to the injured one the benefit of his skill and learning, to the end that life may be preserved, would, the court believes, result in the loss of many lives which might otherwise be saved. It is not to be presumed that competent surgeons will wantonly operate, nor that they will fail to obtain the consent of parents to operations where such consent may be reasonably obtained in view of the exigency. Their work, however, is highly humane and very largely charitable in character, and no rule should be announced which would tend in the slightest degree to deprive sufferers of the benefit of their services.

Waiver of Privilege Including Subsequent Examination

(Patnode vs. Foote (N. Y.), 138 N. Y. Supp. 221)

The Third Appellate Division of the Supreme Court of New York says that the plaintiff, who brought this action to recover damages for alleged personal injuries, did not call her attending physician as a witness in her behalf. He was called as a witness by the defendant, however, and when first called, and sought to be examined by the defendant's counsel, the plaintiff objected to his being permitted to disclose what he had learned with respect to her injuries and her physical condition while treating her professionally. The trial court properly ruled that he was prohibited from so doing by the provisions of Section 834 of the New York Code of Civil Procedure. Whereupon, without objection, the plaintiff adopted the physician as her own witness, and on her examination he detailed her injuries resulting from the accident, his manner of treatment, and her progress toward recovery, and that after a time he ceased treating her, because he considerd she needed no further attention.

The trial occurred about seven months after the injury, and about five months after the witness had ceased his treatment. The plaintiff had testified that at the time of the trial she was still suffering from her injury. On reexamination of the physician by the defendant, which in effect was a cross-examination, in view of the testimony elicited from him by the plaintiff herself, he testified that he had examined the plaintiff two or three days before the trial at her request, and he was asked to state the physical condition in which he found her at that time. The plaintiff objected to his giving such testimony, and the objection was sustained; but it was error to exclude the evidence of what the witness learned respecting the plaintiff's injuries and her recovery from them on the subsequent examination.

The plaintiff, by adopting the physician as her own witness and interrogating him as to her injuries and ailments resulting from the accident, waived her privilege of having him remain silent as to what he learned on an examination of her after his regular treatment had ceased. They were the same injuries and ailments which he had treated, and, having interrogated him in open court as to a part of what he learned concerning them, she could not shut the door as to the remainder. Notwithstanding the provisions of Section 836 of the Code of Civil Procedure respecting a written waiver of the testimony of a physician, the examination of a physician in open court operates as a valid waiver. A waiver respecting the testimony of an attending physician, once made, is general and lasting, and cannot be recalled. A physician, being called to testify by his patient as to the existence and treatment of a certain ailment after injury, may be asked by the opposite party if he did not treat such patient for the same disease at a prior time; and he may also be interrogated respecting what he learned on a subsequent examination after his treatment at the time of the accident had ceased.

Appeals from and Reviewing of Board of Health Regulations

(Board of Health of Cranford Township vs. Court of Common Pleas (N. J.), 85 Atl. R. 217)

The Supreme Court of New Jersey holds that the court of common pleas is without jurisdiction to try anew an appeal from the small cause court adjudging a defendant guilty of a violation of the provisions of the sanitary code of a municipality, ordained under the provisions of the act creating local boards of health. If such a right of appeal exist, it confers no power on the common pleas to adjudicate on the reasonableness of the regulation of the local board of health, since such an issue can be determined only by this court on certiorari.

It was not within the legislative intent, in enacting legislation conferring on the local boards of health the power to prescribe quarantine regulations in a district or locality infected with a contagious disease, to subject the discretion of such boards to the review of the local court for the purpose of substituting the judgment of such tribunal for that of the boards to which the power is specifically committed. If the boards of health so constituted transcend their authority in a given case, the act itself provides a remedy to the party aggrieved.

The court says that it is unable to perceive any authority in the legislation itself, or in the public policy on which it is based, which can be said to contemplate the submission to a legal tribunal of the public necessity which requires in an emergency the prompt and expeditious intervention of a board to which the legislature for the protection of life and health in a community has especially committed the determination of the facts.

No question was made in this case as to the conceded power of a proper reviewing tribunal to pass on the reasonableness of an ordinance or a resolution passed under general laws, or the manner of the exercise of the powers therein conferred. That question has long been settled in the affirmative by repeated adjudications. But the insistence was that a tribunal to which an appeal is presumably given may, by its review of conditions and exigencies in a trial anew, determine adversely to the board to which the power has been specifically committed, by legislative act, that its exercise in any given case was unwarranted, and that its discretion was improperly exercised. The court finds no authority in the act for such a claim, and it is proper to assume that, if the legislature intended to confer such power, it would have found expression in the act. The statute makes provision for the interposition of the court of chancery under certain conditions, and it defines the liability which may be imposed on the members of the board by reason of an excessive or illegal use of power conferred. The legislative recital of these remedies carries with it a presumption of the exclusion of other and additional remedies.

To assume that the legislature intended to confer a review of a discretionary power of this character, vested in a statutory board, charged with its exercise in critical situations, involving detriment to the life and health of a community, is tantamount to a declaration that the police power of the state is moribund and useless. It will not be assumed, therefore, in the construction of such a statute, that the legislature intended to defeat its own will or to create absurd results such as would ensue under such conditions.

Society Proceedings

COMING MEETINGS

American Public Health Association, Colorado Springs, Sept. 9-13.
Electro-Therapeutic Association, New York, Sept. 2-4.
Kentucky State Medical Association, Bowling Green, Sept. 2-4.
Michigan State Medical Society, Flint, Sept. 5-6.
Ohio State Medical Association, Cedar Point, Sept. 2-4.

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Twenty-First Annual Meeting, held at Hartford, May 21-22, 1913

(Concluded from page 219)

The Anilin Dyes in Surgery

Dr. John W. Churchman, New Haven: Fifteen years ago I found that it was possible to demonstrate a very sharply selective affinity between a common dye, gentian violet and certain bacteria. By the use of this dye one can pick out distinctly two kinds of organisms: one, absolutely unaffected by the dye; and the other, killed, if stained with it, and prevented from growing if gentian violet is added to the mediums in which it is planted. It was found that the organisms killed by this dye were the ones which retain the stain in the Gram method. In poliomyelitis we can say positively that the dye has a distinct restraining effect on the virus, although I am not yet ready to say that it actually kills it. I feel sure that eventually something important will come out of the findings in this line. At present we are able to determine the function of a few organs with some degree of accuracy. The motor capacity of the stomach may be thus fairly well measured.

DISCUSSION

Dr. Leo F. Rettger, New Haven: In recent years anilin dyes have come in for a great deal of attention. In fact methylene blue has been regarded as a peculiarly active agent and was known as far back as 1880. It and Dr. Churchman's gentian violet have a certain action on bacteria. My results have borne out those of Dr. Churchman. All of these dyes have wonderful diffusibility through the body. With this quality and the comparative non-toxicity, if the extremely disinfectant action can be combined, there is a great deal of hope for the treatment of all sorts of bacterial infections. If we can improve some of these dyes, increase their bactericidal action and make them more stable in the body, and yet not increase their toxicity, we shall have the ideal chemical for chemotherapy.

Present Status of the Roentgen Ray in Diagnosis

Dr. Arthur C. Heublein, Hartford: We have had to overcome the skepticism concerning the accuracy of the Roentgen ray in the diagnosis of bone injuries, and the same obstacle has seemed to follow us in proving its efficacy in diagnosing urinary calculus, lesions of the gastro-intestinal tract with a bismuth-meal enema, and hydronephrosis and ureteral kink by means of the collargol injection of the ureter. This skepticism is fast disappearing. The Roentgen ray is now used for the detection of stones in the urinary system. In the lower ureteral region it is absolutely necessary for the cystoscopist and roentgenographer to work together. Gallstones are seldom found by means of the Roentgen ray, being largely made up of organic salts.

DISCUSSION

Dr. Thomas N. Hepburn, Hartford: We have lately, with the aid of the Roentgen ray and collargol injection of the ureter, discovered that ureteral disease is comparatively common. In making collargol injections we use a dilating catheter inserting it into the ureteral part until it fits snugly, and then letting the collargol flow in, using the gravity method. Anywhere along the course of the ureter, you may see the stricture in the fluid column. Roentgenograms will also help to decide what one is going to do to the kidney.

It is absolutely essential in taking pictures for renal calculus to take both kidneys, for double renal calculus is exceedingly common. It is also important for the surgeon to get a picture after operation in order to prove that the calculi are not there.

Dr. Orrin R. Witter, Hartford: I would emphasize the value of a negative finding in the case of a kidney condition in which the entire clinical picture is that of renal calculus with extreme pain and blood in the urine, the roentgenogram being negative.

Dr. George Blumer, New Haven: Occasionally chronic interstitial nephritis is accompanied with typical attacks of renal colic. In such a case, a negative picture would be of the greatest value.

Pyelitis

Dr. Charles J. Bartlett, New Haven: Pyelitis is common in both adults and children, is one of the easiest conditions to pass unrecognized, and is frequently overlooked or mistaken for some other disease. In acute pyelitis the destruction of the tissue is slight, but in the later stages the organ is beyond repair. Under normal conditions the urine is bactericidal and quite resistant to bacterial invasion. The most common predisposing cause is some anatomic condition interfering with the outflow of urine. The rational treatment of pyelitis as well as polyuria in general is by the use of hexamethylenamin. In the small doses in which it is usually applied there is no free formaldehyd formed in the urine in most cases. The quantity must be increased, however, until free formaldehyd is formed. The toxic effect is then produced; the dose may be increased until this appears. When vaccines are used they should be autogenous.

Acute Primary Pyelitis in Children

Dr. Fritz C. Hyde, Greenwich: This is not an uncommon disease. Frequently the routine examination of the urine would probably disclose unexpected pus. It is altogether possible that in these cases of mild infection the patients often recover without special treatment. I believe that the infection is usually ascending for the following reasons: There are few recorded cases in males. I have seen none. Infection via the female urethra from soiling of the vulva is theoretically easy and likely. Infection borne by the blood would probably cause involvement of the true kidney structure, and not localize in the pelvis of the kidney. This would also be true in infections from contiguous structures. The recorded cases show no evidence of nephritis. My six cases, all in girls, were characterized in common by fever, usually ascribed at first to some other cause; pus in an acid urine; no bladder symptom, except in one instance, and prompt improvement and eventual cure by the use of ordinary antiseptics. In one case the onset of the original attack and of the relapses was initiated by rigors. In four of the cases there had been a pretty well-marked intestinal disturbance. In two cases there was an associated nasal pharyngitis. In none was there any evidence of nephritis.

Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis

Dr. David R. Lyman, Wallingford: If we can put the lungs to rest, we can improve the chances for recovery. The beneficial effects that sometimes follow the appearance of a pleural effusion are noticed by some physicians, so that there is a growing tendency against the removal of such effusions, unless distress is caused to the patient. The compression of a lung limits the mobility, the flow of the blood and the absorption of toxic products through the lymph-channels. Putting the lung at rest also promotes the formation of connective tissues and tends to limit the process and finally control it. Nitrogen is the gas most generally used, as it is more slowly absorbed than either oxygen or sterile air, which were previously employed. There are two methods of performing the operation, the puncture and the incision method. The latter method, in my opinion, is the better but recent improvements in the puncture method seems to have made it the one of choice. Injury to the lung and the production of gas emboli are both obviated by means of the manometer. In no case can an attempt be made to inject the gas in the face of a negative reading by this instrument. From 300 to 500 c.c. may be injected at the first attempt, if no discomfort is experienced by the patient. It is better to increase the quantity gradually. The risk is by no means sufficient to militate against the use of the treatment.

DISCUSSION

Dr. H. S. Wagner, Hartford: In studying one hundred cases of tuberculosis I found that it was very difficult to decrease the râles and sputum; any line of treatment that will do this is worthy of being employed. Pneumothorax will accomplish this in certain cases.

Dr. Henry F. Stoll, Hartford: In these cases I use the manometer. It is the only thing to do, for if you have an adhesion you cannot strike the pleural cavity, and the hole is much larger. Of twelve cases in which I have resorted to compression, nearly all of the patients had disease in both lungs. I have used an aspirating needle of fair size with a comparatively short point.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Albany (N. Y.) Medical Annals

June, XXXIV, No. 6, pp. 317-380

1 *Pernicious Endocarditis. H. C. Gordinier, Troy, N. Y.
2 Refuse Disposal. W. T. Wooley, Schenectady, N. Y.
3 Ill-Effects of Exertion in Angina Pectoris, with Report of Case. F. L. Classen, Albany, N. Y.
4 Effects of Bacterial Disease of Dental Structures on General Health. N. K. Fromm, Albany, N. Y.

1. **Pernicious Endocarditis.**—No disease, Gordinier states, presents at times more difficulty in its diagnosis or is more often overlooked than pernicious endocarditis and this despite our advanced clinical and bacteriologic methods. Those he says who have fallen in its diagnosis can bear witness to this fact as well as to the surprises and feelings of chagrin that they have experienced as a result of the revelations of the post-mortem room. If one will even bear in mind the characteristics presented by various types of this disease, he will rarely err in the diagnosis. The most precise method of diagnosis is the bacteriologic, i. e., by making blood-cultures, microorganisms being present in the blood-stream in about 90 per cent. of the cases. Of course, when this method gives positive results, it means much, but when negative, it means little. Hence, in some cases, one is naturally forced to rely for a diagnosis on clinical symptoms and physical signs.

A temperature of a septic type with or without recurring chills and severe sweats, especially if the fever be unaffected by quinin, the presence of petechiae of the skin and mucous surfaces, or emboli of spleen, lungs, kidneys, brain, peripheral vessels, etc., together with the presence of endocardial murmurs whose quality changes from time to time, or the presence of new endocardial murmurs especially if diastolic in point of time, form a group of symptoms which are almost positively diagnostic. Frequent blood examinations will be sufficient to exclude the various types of malaria and assist materially in excluding typhoid. The blood-picture of this disease is one of a very severe secondary anemia with a moderate or great polymorphonuclear leukocytosis, the latter varying between 20,000 and 60,000.

American Journal of Medical Sciences, Philadelphia

July, CXLVI, No. 1, pp. 1-156

5 *Ankle-Clonus without Gross Disease of Central Nervous System. W. Tileston, New Haven, Conn.
6 *Rational Treatment of Surgical or Non-Pulmonary Tuberculosis. J. B. Hawes, Boston.

7 *Myocardial Hydrothorax, with Reports of Cases. J. M. Anders, Philadelphia.
8 Congenital Atresia of Duodenum. A. L. McDonald, Duluth, Minn.
9 *Recovery from Tuberculous Meningitis with Report of Cases. R. L. Pitfield, Philadelphia.
10 Intensive Study of Epidemiology of Pellagra. J. F. Siler, U. S. Army, and P. E. Garrison, U. S. Navy.
11 Diagnosis of Inflammation in Anterior Ocular Segment. B. F. Baer, Philadelphia.
12 *Epididymitis Due to Colon Bacillus. W. S. Reynolds, New York.
13 Rational Treatment of Tetanus, with Report of Twenty-Three Cases from Episcopal Hospital, Philadelphia. A. P. C. Ashhurst and R. L. John, Philadelphia.
14 Isolated Sclerotic Involvement of Mitral Valve. R. N. Willson, Philadelphia.

5. **Ankle-Clonus.**—Tileston says ankle-clonus may be found more or less frequently in a variety of conditions, without accompanying organic nervous disease. These conditions are: (a) Acute infectious diseases, especially typhoid; (b) chronic infections associated with marked toxemia, especially tuberculosis of the lungs in the third stage; (c) uremia shortly before and during the acute uremic seizure; (d) epilepsy immediately after the convulsion; (e) intoxication from certain drugs, e. g., scopolamin, ether and chloroform; (f) excessive fatigue; (g) exceptional cases of certain neuroses, viz., neurasthenia, hysteria, paralysis agitans; (h) psychoses in the stage of excitement; (i) chronic articular rheumatism. With the exception of joint disease, a toxic action on the nervous system may be assumed in all these states as the underlying factor in the production of clonus. This is obvious in the case of the infectious diseases and drug intoxications: in uremia, epilepsy and undue fatigue the presence of toxic products of metabolism may be regarded as probable, though not yet demonstrated, and even in hysteria and neurasthenia the action of toxic products in severe cases cannot be excluded. In the case of articular rheumatism a constant spinal irritation from the inflamed joint tissues is the probable cause.

In two autopsies on cases of phthisis, with clonus, no changes were found in the central nervous system. In the writer's case, however, inflammatory exudate was demonstrated about the posterior median artery in the posterior septum of the bulb. Clonus due to toxic states usually may be distinguished from that of organic nervous disease by the absence of spasticity and of other signs pointing to organic disease, and particularly by the absence of the Babinski and Oppenheim toe signs. An exception to the above rule is encountered after the use of hyoscin in medicinal doses and immediately after the epileptic attack, in both of which instances the Babinski and Oppenheim signs may be positive. The occurrence of ankle-clonus is of prognostic value in uremia, preceding at times the acute seizure. Ankle-clonus usually disappears a few days before death; otherwise its disappearance usually indicates an improvement in the patient's condition.

6. **Treatment of Non-Pulmonary Tuberculosis.**—This paper is a description of the author's clinic at the Massachusetts General Hospital. Tuberculin is administered once a week according to the well-known rules laid down by Trudeau. The initial dose is 0.0001 to 0.0005 mg., rarely 0.001 mg. This is gradually increased up to 50 to 100 mg. Increase of dosage is gaged by careful observation of clinical signs of a reaction—local, focal or constitutional. Since the time that this clinic has been devoted purely to extrapulmonary tuberculosis Hawes has had 209 patients under treatment and observation. Of these 209 patients fifty are in regular attendance every week or every other week, and are therefore not included; forty-three patients for one reason or another remained under treatment too short a time to allow of their being considered in this series. Each of the remaining 116 patients has been under more or less constant supervision, coming to report once a month or once in two or three months; the minimum period since attending regularly has been six months; in a large proportion of cases it has been two to four years since they were regular members of this department.

Of sixty cases of tuberculous adenitis, which includes young and old patients, those with merely one small broken-down gland and those with extensive bilateral processes on which many operations had previously been performed with no permanent benefit, forty-six have the disease arrested and are now well and healthy in every way, thirteen have been markedly improved, while in only two instances has the disease progressed despite treatment. There have been no deaths. Of the twenty-eight patients with ocular tuberculosis in some form nine have had the disease arrested, seventeen have been markedly improved, while in two cases the process has advanced. Of the twenty-eight remaining cases, which include various other forms of non-pulmonary tuberculosis, fourteen have had their disease arrested, twelve have improved, while in two the disease has progressed.

7. **Myocardial Hydrothorax.**—Of twenty-seven cases of hydrothorax due to heart lesions that have fallen under Anders' observation not less than sixteen (59 per cent.) were apparently caused by myocardial disease. In five of the sixteen cases clear and convincing indications of well-pronounced chronic interstitial nephritis were coexistent. There were doubtless instances primarily of arteriosclerosis to which both the myocardial changes and the nephritis were secondary. In eight cases only slight evidences of arteriosclerosis coexisted, so that the probabilities are that either the myocardial degenerative and inflammatory lesions were primary or the changes in the blood-vessels of the heart and other viscera were decidedly more marked than in those that are accessible. In nine cases, however (56 per cent.), the cardiac incompetency which led to the production of the hydrothorax was caused by chronic myocarditis, as will appear evident hereafter. In none of the sixteen cases were the clinical evidences of foregoing valvular sclerosis found. It is interesting to note that all of Anders' cases occurred in males.

The treatment of this form of hydrothorax Anders emphasizes must have the same objects in view as in the other varieties, and has reference to the removal of the transudate by tapping the chest, and, so far as possible, of the causative condition by hygienic and medicinal means. It is futile, as a rule, to attempt to get rid of the transudate by the exhibition of digitalis and other cardiac stimulants without first withdrawing the fluid by aspiration if it be considerable in amount. Anders has repeatedly observed that this class of drugs only tends to aggravate the dyspnea without either diminishing the amount of the transudate or increasing, to an appreciable extent, the urinary secretion. On the other hand, after removing the fluid by means of thoracentesis, cardiac stimulants often take hold and are of signal service in overcoming the dilatation of the heart and preventing a recurrence of the transudate. The myocardial insufficiency in these cases demands a resort to remedies that will strengthen the heart muscle, for example, digitalis, strophanthus and the like, independently of an increased blood-pressure, although nitroglycerin should be combined with these drugs if the arterial tension be decidedly elevated. Rest is a most valuable adjunct in the treatment of the cardiac dilatation to which the hydrothorax is due; it must be, however, absolute and long continued. The use of saline laxatives carried to the point of rather active catharsis—three or four fluid evacuations daily—proved of decided service in a few of the cases. In five instances of the series reported a salt-poor diet was employed, with favorable effect, reaccumulation of the transudate being thereby noticeably delayed.

9. **Recovery from Tuberculous Meningitis.**—In view of the fact that recovery can take place in perhaps one in 200 cases, Pitfield urges that steps should be undertaken actively to facilitate such a possibility. The patient should be put in a quiet, airy, dark place and kept as free from annoyance as possible. Lumbar puncture should be performed at once. Pitfield had a patient, a boy, aged 5 years, from whose spine 40 c.c. of fluid were removed every other day for two weeks, with marked amelioration in the symptoms. Forced feeding through nasal tube, with milk and eggs, should be done. Morphin administered for pain and as a sedative, if respira-

tion is not embarrassed thereby, and because free formaldehyd is found in the spinal fluid after the ingestion of hexamethylenamin, the latter drug should be given freely. Pitfield has found, after giving it for one day, that formaldehyd can be detected in the fluid with iron and sulphuric acid; and because Raw has reported recovery in two cases in which tuberculin was used, he would advocate one or two injections of this remedy.

12. **Epididymitis Due to Colon Bacillus.**—Reynolds has felt satisfied for some time that cases of chronic gonorrheal urethritis were prolonged by the presence of the colon bacillus and while it has not seemed to be especially virulent in these cases, it is often difficult to get rid of the germ; but when this is accomplished, Reynolds has found that the chronic urethritis improved. While it seems reasonably certain that these organisms, though perhaps under ordinary circumstances they are not very virulent, may quite frequently be the cause of inflammatory conditions of the urinary tract, still there are few cases recorded of epididymitis as a result of colon bacillus infection, such as gonorrhea and tuberculosis. The manner in which infection of the urinary tract is brought about is still a matter of discussion, and it is also unsettled as to whether it is necessary that a lesion of the intestinal tract be present before the organisms are liberated. In epididymitis occurring with some other diseases it seems clear that the epididymis becomes involved by direct extension through the ejaculatory ducts from the posterior urethra or from the prostate. Whether it would be possible for infection to take place in this way, supposing no inflammatory lesion to be present about the opening of these ducts, is questionable, though we find reports of cases of epididymitis in which colon bacilli were found in the urine, but no symptoms of urethritis were present. In such cases, Reynolds says, possibility of infection taking place in such manner must be considered. It is to be remembered, however, that a mild posterior urethritis or prostatitis may give rise to no marked symptoms, and it might be possible in some cases to overlook it unless a careful examination was made.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

June, LXVII, No. 426, pp. 1065-1304

15 *Medical and Surgical Treatment of Puerperal Eclampsia. E. G. Zinke, Cincinnati.
16 *Current Opinions Concerning Toxemia of Pregnancy. W. Pfeifer, Brooklyn.
17 Some Obstetric Observations Pertaining to Internal Secretion. W. H. Good, Philadelphia.
18 Complement Deviation by Corpus Luteum Antigens. J. T. Smith, Cleveland.
19 *Eclampsia a Toxemia of Possible Mammary Origin. P. Wilson, Washington, D. C.
20 Roentgenotherapy of Uterine Fibroids, Menorrhagia and Metrorrhagia. S. Stern, New York.
21 Sarcoma of Omentum. M. A. Tate, Cincinnati.
22 Newer Operations for Restoration of Pelvic Floor with Original Technic for Exposing and Uniting Injured Levatores Ani and Deep Transversus Perinei Muscles. B. C. Hirst, Philadelphia.
23 Formation of Terata. E. A. Schumann, Philadelphia.
24 *Extra-uterine Pregnancy and Its Subsequent History: Analysis of 147 Cases. P. F. Williams, Philadelphia.

15. **Treatment of Puerperal Eclampsia.**—Zinke has formulated the following definite plan of treatment for eclampsia. Whenever the condition of the patient and her environment permit, it is carried out in the order mentioned. If the patient has, or has had, convulsive seizures, twenty-five drops, or fifteen minims (1 c.c.) of Norwood's tincture of veratrum viride (especially prepared and kept for this purpose) are given hypodermically, and this dosage is repeated every hour until the pulse is reduced to 60 per minute or less. If within an hour the pulse should fall from 150 to 100 per minute, only ten drops of the veratrum are to be injected in the succeeding dose, no matter whether this be the second, third or fourth hypodermic. More than two or three full doses are rarely necessary to bring the pulse to 60. Veratrum viride thus administered is the most valuable remedy in the treatment of eclampsia. A copious enema of soap water serves to wash out the large intestine. The catheter is employed to empty the bladder; the urine is measured to learn the secretory power of the kidneys, then the urine is examined. As soon as the patient is able to swallow, a tablespoonful of Epsom salts, or some other saline cathartic, is administered per mouth. Stronger cathartics are only given when the saline proves ineffectual. (By this time, if the patient is not in a hospital, she should, if possible, be taken to one.)

Whether the patient is in a hospital or not, immediately after the above treatment has been administered, she is given a hot bath or hot pack, preferably the former. Neither the bath nor pack exceeds a half-hour in duration. The patient is then rubbed dry and placed in a warm, dry bed. The bath or pack is given not oftener than twice in one day. Ordinarily, but one bath or pack is necessary in twenty-four hours. The only food permitted is milk or broth, or both. Water or Fischer's solution may be freely administered. The latter may be given per rectum or, if the case be an urgent one, intravenously. Chloral per os or rectum is given if the patient is very restless. Of late Zinke has discarded the use of chloroform and morphin; ether or gas-ether is the anesthetic if operative measures must be employed. If the patient is at the end of the first stage of labor, and then only if the symptoms are grave, may forceps be employed to terminate labor. If the first stage is not complete or if labor has not begun and the patient has improved under the treatment above mentioned, the case is then left to nature until the first stage of labor is completed, when forceps may be applied. In cases of anemia, or asthenia from any cause, the normal saline solution or Fischer's solution is given, per rectum or intravenously.

With very little variation this has been Zinke's plan of treatment for the last ten years, during which time thirty cases of eclampsia were observed. Four mothers, 13.3 per cent., died. Fifteen, or 50 per cent., of the children were lost. The still high maternal mortality, 13.3 per cent., and fetal mortality, 50 per cent., in his last thirty cases, he says, is due to the fact that two of the mothers were moribund when first seen by him; one remained in profound coma after the first, another after the eleventh convulsion. The third died of shock and hemorrhage following an *accouchement forcé* performed by the doctor in charge of the case. The fourth died soon after the eleventh convulsion and a comparatively easy vaginal hysterotomy performed without an anesthetic. It is not claimed that the above mode of procedure will be invariably successful; but Zinke's experience impels him to believe that in those cases in which it fails, very little could have been expected from surgical intervention. Certainly in the presence of any condition (maternal or fetal) which makes the birth of the child *per viam naturalem* hazardous or impossible, abdominal or vaginal cesarean section or deep cervical incisions, each depending on the period of gestation and other circumstances, are justifiable operations. But in view of the evidence presented, it can but prove a serious error to maintain that an immediate interruption of gestation or termination of labor, by any surgical method in vogue, is the treatment *par excellence* in eclampsia. The good results obtained from strictly medical care in these cases far exceed the results accruing from all the surgical means proposed for relief from this disease.

16. **Toxemia of Pregnancy.**—Pfeifer claims that pregnancy in many cases is not physiologic and in all cases is so close to pathologic that slight additions make it frankly so; further, the profession and laity are slowly coming to this view. There will be fewer cases of severe toxemia if we pay closer attention to the minor ills of pregnancy and regard them as possibilities of future trouble. While the various types of toxemia are probably phases of one disease, no one definite etiology obtains in all cases. A predisposing cause being admitted, the pathogenesis of the toxemia cannot be stated with accuracy at the present time, beyond the unsatisfactory term, "disturbed metabolism." Usually the types are found to conform to one of two forms, hepatic or nephritic, with

the *former often causing the latter*. The urine systematically examined in toxemia for nitrogen partition where possible, as well as albumin, acetone and diacetic acid will aid in *diagnosis and treatment* in the early cases and possibly the later stages as well. Blood-pressure examination is of value in all stages of toxemia, especially that of the later months, and should be taken as often as the patient is seen. No rise can be regarded lightly and may be the first sign of trouble. The few serious cases in which pressure is low must be considered exceptional and do not negative the value of the test. The leukocyte count shows the resistance of the patient and the progress of the disease. Eye signs furnish an urgent indication for terminating pregnancy if seen early.

In treating the actual convulsive seizures, the sooner the uterus is emptied after the first convulsion, avoiding *accouchement forcé*, the better the prognosis for mother and child. Where the attendant is not capable of major surgery and the surroundings incompatible with clean work, conservative *treatment (perhaps Stroganoff's method)* will be wisest. Venesection in advance of delivery may not always be wise, as the additional blood lost in operative procedures plus the shock of the operation *may prove too great*. Venesection, no matter what the character or rate of the pulse, as proposed by one writer, seems unjustifiable.

19 **Eclampsia.**—Wilson believes that the symptoms and pathology of the parturient paresis can only be explained on the assumption that it is due to the circulation in the blood of a powerful toxin. The predisposition to the disease shown by animals which by breeding or management are converted into milk machines and the wonderful reduction in the mortality from 70 to 1 per cent. by a treatment which certainly tends to limit absorption from the udder, point conclusively to a disturbance in the early milk secretion as the origin of the toxin.

24. **Extra-Uterine Pregnancy.**—From Williams' study of 147 cases it appears that twenty-eight, 19 per cent. of the cases occurred in primiparous women. Twelve cases, 8 per cent., *were illegitimate pregnancies*. Forty-two cases, 30 per cent., had a history of previous abortion; in twenty-six cases, 28 per cent., the preceding pregnancy had terminated prematurely. The average interval after an intra-uterine pregnancy until the extra-uterine *pregnancy* developed was forty-five months. The average interval between the two *attacks in the seven cases* in which the condition was repeated was twenty-four months. Recovery was noted for each of the seventeen patients operated on in shock. *Sterilization* was performed eighteen times, in eight of these cases the opposite tube had been previously removed. Thirty cases, 52 per cent., of the fifty-eight cases whose subsequent *history is known*, did not develop any later pregnancies. Thirty-nine intra-uterine pregnancies have developed subsequent to the extra-uterine condition, twenty-eight *ending at term*, eight aborting while three are at present pregnant. The extra-uterine pregnancy was repeated seven times, a ratio to the intra-uterine pregnancies of 1 to 5.5.

Boston Medical and Surgical Journal

July 10, CLXIX, No. 2, pp. 37-72

25 *Typhoid Carrier Problem. C. L. Overlander, Boston.
26 *Treatment of Cardiac Edema with Alkali and Salt. L. H. Newburgh, Boston.
27 Cancer of Stomach. P. E. Truesdale, Fall River, Mass.
28 Some Relationships Between Orthopedic Surgery and Internal Medicine. H. W. Marshall, Boston.
29 *Eighteen Cases of Separation of Lower Femoral Epiphysis at Boston City Hospital. H. Binney and F. B. Lund, Boston.

25. **Typhoid Carrier Problem.**—Overlander is of the opinion that until some more easy, rapid and accurate method has been devised for determining the presence of the typhoid bacillus in the excreta, and for the subsequent treatment of the patient to rid him of them, detention of such persons in quarantine until successive negative findings, of exceedingly doubtful value, have been obtained, is a proceeding unwarranted viewed from either the standpoint of the patient himself, the health officer or the community. Such a procedure, involving a false confidence in their freedom from infected material, in those released would, in his *opinion, be productive* of more harm than good. It would be more practical, less arduous and better conserve the public health to regard each person recovering from typhoid as a potential *carrier* to carefully instruct such persons concerning this subject and the precautions they should take and if possible to forbid them to personally handle public food supplies. The application of any approved method for its eradication, however good it may be, must not be limited to any community, *city*, state or nation. It is a problem world-wide in its scope, and success will only be attained by the hearty cooperation of every individual in every civilized country.

26. **Treatment of Cardiac Edema.**—*Newburgh claims that* the administration of alkali or of alkali plus salt to patients with cardiac edema does not cause diuresis. But the administration of alkali plus salt to persons with heart disease *may* cause edema, and appears to be positively harmful.

29. **Separation of Lower Femoral Epiphysis.**—Owing to danger of subsequent interference with growth, the authors urge that absolute reduction and fixation at the earliest possible moment is of great importance in the treatment of this condition. Early and repeated roentgenograms they hold are necessary to control the completeness and permanency of the reduction. In simple cases, where immobilization in flexion fails to hold the fragment in correct position from the start, open reduction with the use of a small nail or bone-plate is indicated. In compound separation the same means of positive fixation is to be recommended. The foreign body should be *removed soon after union* has begun in order to avoid interference with growth. This should be done not later than the third week.

Bulletin of Medical and Chirurgical Faculty of Maryland Baltimore

June, V, No. 12, pp. 205-228

30 Local Specific Therapy of Infections. S. Flexner, New York.

Journal of Cutaneous Diseases, New York

July, XXXI, No. 7, pp. 457-540

31 Borderland of Dermatology. I. Dyer, New Orleans.
32 Important Drugs Used in Dermatology. M. L. Ravitch, Louisville, Ky.
33 Adhesive Plaster as Direct Dressing in Treatment of Wounds, Ulcers and Infective Conditions: Its Fulfilment of Bier and Wright Principles. M. B. Hutchins, Atlanta, Ga.
34 Dermatitis Repens of Lower Extremity. G. A. Pudor, Portland, Me.
35 Sulphur in Treatment of Syphilis. C. W. McMurtry, New York.

Journal-Lancet, Minneapolis

July 1, XXXIII, No. 13, pp. 359-384

36 Infant-Feeding in Theory and Practice. F. W. Schultz, Minneapolis.
37 Autopsy on Case in Which Both Rectus Muscles Were Cut Transversely. S. R. Maxeiner, Minneapolis.

Medical Record, New York

July 12, LXXXIV, No. 2, pp. 47-92

38 Metabolism and Circulation. A. Haig, London.
39 *Psychogenetic Disorders; Cases Seen in Detained Immigrants. H. A. Knox, Ellis Island, N. Y.
40 Thirty Heads in Mesial Section: Air Sinuses. *R. H. Woods*, Chicago.
41 *Physiologic Treatment of Talipes. J. Teschner, New York.
42 Influence of Fomites in Transmission of Disease. J. T. A. Walker, New York.
43 Present Status of Esophagoscopy *in Cancer of* Esophagus. R. Lewisohn, New York.
44 Negative Roentgenoscopy in Clinically Diagnosed Gastric Carcinoma. G. H. Stover, Denver.

39. **Psychogenetic Disorders.**—Psychogenesis, Knox states, is *important* in considering whether or not a given psychosis is founded on degenerative soil and hence whether *the cause* of a given alien's insanity existed prior to landing. Cases *occur in* which psychoses have arisen in healthy persons with apparently normal nervous endowment. Psychogenetic *disorders* are important to all who are *identified* with medicolegal problems since, as Glueck says, most of the psychoses of criminals are psychogenetic in character. A knowledge of psychogenetic

disorders is necessary in making accurate diagnoses and especially prognoses in traumatic and other organic mental diseases or supposed diseases of this nature.. Immigrants suffering from psychogenetic disorders should not be examined for defectiveness while in this state, and lay-workers with no knowledge of medicine, psychiatry or neurology cannot detect these conditions but would call such a patient "stupid" or rate him as "seven years old on the Binet."

41. **Physiologic Treatment of Talipes.**—Every brace and every stiffening of the shoe according to Teschner, prevents proper ankle motion and forces the foot into a position of eversion, and thus prohibits the use of the ankle joint in walking. He says that no shoe that can be constructed is curative. The shoe that should be ordered is one that will permit absolute freedom of ankle and toe action and should fit closely in the arch and heel. The width of sole must be sufficient to permit the entire weight-bearing foot to rest on the sole. The broad part of the inner side of the sole must be extended sufficiently backward to permit the entire ball of the foot to rest on it and the arch of the shoe must be short. Any support which may give temporary relief is vicious because it causes the weight to be borne on the inner arch, which is unphysiologic.

The anatomic and physiologic studies of the foot have positively demonstrated that the inner arch was never intended to bear weight, hence the use of an arch support is unphysiologic and fallacious. The condition of flat foot is due to a faulty gait, occasioned by many varied causes, all of which tend to faulty muscular action. The lack of tonicity and the lack of proper and concerted action of the muscles of the hip, thigh, leg and foot are the real causative factors, not excluding the pose of the trunk. The education and strengthening of the muscles will bring about a proper gait, and a cure will be effected. The power of balance on one foot is partially or totally destroyed by improper use. This, Teschner points out, can be readily taught and restored. When the full weight of the body is carried on the balancing foot the arch is considerably and visibly raised by muscular action. The elements of the proper gait are taught in conjunction with the acquired balance to eliminate the swaying of the body and to give a propulsive impulse to the step. The outward rotation of the thigh, and the pointing of the knee outward and upward must be overcome in order to insure the placing of the toes forward at each step. Teschner's treatment consists solely of foot and leg exercise.

Mississippi Medical Monthly, Vicksburg

July, XVIII, No. 3, pp. 45-64

45 Some Unusual Abdominal Cases. S. H. Hairston, Meridian
46 Cancer of Breast. S. W. Johnston, Vicksburg.
47 Infant Feeding. L. F Barrier, Greenwood.
48 Chronic Malaria and Malarial Relapse. C. C. Bass, New Orleans.
49 Diphtheria. S. R Humphries, Jackson.

New York Medical Journal

July 5, XCVIII, No. 1, pp. 1-60

50 Action of Testicular Extract. A. J. Smith and W. J. Crocker, Philadelphia
51 Relations of Adhesions and Intestinal Angulations Resulting from Enteroptosis, to Chronic Constipation. R. C. Kemp, New York.
52 Some Roentgenograms of Obscure Stomach and Intestinal Cases. S. Tousey, New York.
53 Torpor Recti; Dyschezia. G. Singer, Vienna, Austria.
54 New Bioroentgenograph. I. S. Hirsch, New York.
55 Non-Tuberculous Apical Lesions. M. Fishberg, New York.
56 Early Diagnosis of Renal Tuberculosis. R. C. Bryan, Richmond, Va.
57 Luetin Skin Reaction in Syphilis. D. J. Kaliski, New York.
58 Need of Microscope in Treatment of Gonorrheal Urethritis and Prostatitis. J. Broadman, New York.
59 Plans for Reduction of Infant Mortality. E. J. Lederle, New York.

July 12, No. 2, pp. 61-108

60 Longevity and Rejuvenescence. I. L. Nascher, New York.
61 Wounds. S. Lloyd, New York.
62 Relation of Industry to Diseases of Heart and Lungs. J. M. Swan, Rochester.
63 Diabetes Mellitus: Treatment with Bacillus Bulgaricus Cultures. J. W. Beveridge, New York.
64 Prostitution in Japan. D. C. McMurtrie, New York.
65 Exophthalmic Goiter: Report of Case. S. J. Essenson, New York.
66 Anterior Poliomyelitis: Infantile Spinal Paralysis; Polioencephalomyelitis; Acute Central Infectious Paralysis. C. M. Hazen, Richmond, Va.
67 Neosalvarsan: Intramuscular or Intravenous? R. Ormsby, New York.
68 Interpretation of Pain in Surgical Emergencies. L. K. P. Farrar, New York.

Pennsylvania Medical Journal, Athens

June, XVI, No. 9, pp. 679-762

69 Relations of General Practitioner to Department of Health. T. B. Johnson, Towanda.
70 Infant Feeding. A. Hand, Philadelphia.
71 Caloric Value of Foods with Special Reference to Feeding of Children. C. B. Farr, Philadelphia.
72 Differential Diagnosis and Treatment of Puerperal Infection. R. R. Huggins, Pittsburgh.
73 Thrombosis of Mesenteric Artery. E. LaPlace, Philadelphia.
74 Acute Membranous Vaginitis in Pregnancy due to Enterococcus. G. E. Shoemaker, Philadelphia.
75 Successful Removal of Ulcerated Carcinoma of Breast by Halstead Method. J. D. Farrar, Philadelphia.
76 Carcinoma of Larynx, Operation by Thyrotomy, with Subsequent Hemilaryngectomy. G. W Mackenzie, Philadelphia.
77 Results in Philadelphia Patients Discharged from Mont Alto in 1909, on Jan. 1, 1913. A. P. Francine, Philadelphia.
78 Prophylaxis and Treatment in Typhoid. C. Long, Wilkes-Barre.
79 Psychopathologic Phases Observable in Individuals Using Narcotic Drugs in Excess. C. C. Wholey, Pittsburgh.
80 Plea for Entire Removal of Enlarged and Diseased Tonsils. B. C. Gile, Philadelphia.

South Carolina Medical Association Journal, Seneca

June, IX, No. 6, pp. 138-168

81 Gunshot Wounds of Abdomen, with Report of Cases. L. Peters, Columbia.
82 Pellagra in Children with Observations on Eighty-Five Cases in Two Orphanages. H. W. Rice, Columbia.
83 Value of Serum Reaction in Diagnosis of Syphilis and in Detection of Recurrences. G. F. McInnes, Charleston
84 Some Often Overlooked Causes for Disturbances of Heart. T. E. Wannamaker, Cheraw.
85 Management of Toxemia of Pregnancy. R. L. Sanders, Anderson.

Surgery, Gynecology and Obstetrics, Chicago

June, XVI, No. 6, pp. 587-725

86 Orthopedic Principles in Treatment of Abdominal Visceroptosis and Chronic Intestinal Stasis. J. E. Goldthwait, Boston.
87 Thyroid and Parathyroid Problem. J Halpenny, Winnipeg.
88 Chronic Intestinal Stasis. W. A. Lane, London.
89 Bibliography of Chylous Cysts of Mesentery. A. L. Benedict, Buffalo.
90 *Value of Complete Physiologic Rest of Large Intestine in Treatment of Certain Ulcerative and Obstructive Lesions of This Organ. J. Y. Brown, St. Louis.
91 First Successful Case of Resection of Thoracic Portion of Esophagus for Carcinoma. F. Torek, New York.
92 Prostatectomy; with Special Reference to Sequels. J E. Moore, Minneapolis.
93 Nitrous Oxid and Oxygen Anesthesia E. M. Prince, Birmingham, Ala.
94 Anesthesia and Anoci-Association. G. W. Crile, Cleveland.
95 *Inversion of Uterus. W. C. Jones, Chicago.
96 Pathology of Uterine Casts Passed during Menstruation. W. B. Bell, Liverpool.
97 Cases Illustrating Some Surgical Aspects of Persistent Meckel's Diverticulum. H. Drummond, Newcastle-upon-Tyne, Eng.
98 Acute Dilatation of Stomach and Its Treatment. O J. Borchgrevink, Christiania, Norway.
99 Cervical Decidua. F. W. Lynch, Chicago.
100 Fate of Bone Grafts. F. J. Cotton and H. B. Loder, Boston.
101 Spinal Column As Affected by Traction and Hyperextension. N. Allison and A. O'Reilly, St. Louis.
102 *Silver Iodid Emulsion—New Medium for Skiagraphy of Urinary Tract. H. A. Kelly and R. M. Lewis, Baltimore.
103 Gall-Stone Ileus. J. S. Brown, Montclair, N. J
104 Further Consideration of Use of Corpora Lutea in Treatment of Artificial Menopause. C. A. Hill, Pittsburgh.
105 Removal of Strain from Round Ligaments While Healing, after Correcting Retroversion of Uterus. W. T. Coughlin, St. Louis.
106 Birth by Conduplicato Corpore. N. S. Heaney, Chicago.

90. **Value of Complete Physiologic Rest of Large Intestine.**—Brown describes his method of operating in these cases as follows: Through a right rectus incision sufficiently long for general exploratory purposes the abdomen is opened. The

cecum is at once sought and the large bowel is carefully examined from cecum to sigmoid. All pericolic adhesions are then severed, the appendix removed and the stump buried. The ileum is next severed between two clamps, close to the ileocecal valve. The distal ileum is tied off and buried as was the appendix. At a suitable part of the cecum a purse-string is tightly tied. A second purse-string of No. 1 chromic catgut is next placed. Under the loops of this purse-string three long catgut fixation sutures are placed. A stab-wound is next made at McBurney's point, through which a forceps is inserted. The catheter and fixation sutures are grasped in the bite of this forceps and pulled through the stab-wound. The peritoneal surfaces surrounding the catheter are next scarified, and the catheter is pulled through the stab-wound, carrying with it the three fixation sutures. The catheter is now slipped through the button, and the fixation sutures are threaded through the eyes in the button and tightly tied, thus closely approximating the serous surfaces of the cecum to the parietal peritoneum.

A stiff rubber drainage tube is next inserted into the proximal ileum and fixed with a double purse-string suture. The ileum is now brought out of the lower angle of the rectus incision. The parietal peritoneum is made to hug it snugly by a few catgut sutures, and the abdominal wound is closed in the usual way. Indications for restoring the continuity of the large bowel are improvement of the general condition and the return to normal of the discharge from the excluded large bowel as shown after repeated chemical, microscopic or culture-growth examinations of irrigation fluids passed through it, depending on the lesion present. This restoration should not be made too early, particularly in the ulcerative lesions of the colon. When the surgeon deems that the large bowel has sufficiently healed and desires to put this organ back into commission, this restoration is readily done by simply cutting out the anus at the lower angle of the rectus incision, closing its end with a purse-string suture, and making a lateral anastomosis of ileum to ascending colon, or switching the ileum into the sigmoid. Brown has never found any difficulty in restoring intestinal continuity; on the contrary the operation is simple and easy.

This report is based on the experience gained from ten cases so operated. Two were cases of chronic intestinal stasis, with obstructions due to pericolic bands and flexures. Both have greatly improved and are now comparatively well. Three operations were done for the relief of amebic dysentery. All were cured. One for ulcerative colitis with extensive involvement of sigmoid and rectum. This patient is now in good health. One case for extensive obstructive tuberculous colitis. This patient received great relief from the operation and lived in comfort for two months. Three were for late and inoperable malignancies of the rectum. One lived six months, one five months and the third patient, still living, nine months after operation, is comfortable and is in reasonably good health, so it will be seen that there was no mortality.

95. **Inversion of Uterus.**—In obstetrical inversion, Jones claims that the primary cause is uterine relaxation. The chief secondary factors are pressure on the fundus and traction on the cord. In inversion not obstetrical in orgin, uterine fibroid is almost the exclusive cause. Most cases are both acute and complete; in the complete ones, the most important point is the degree of contraction of the cervix. In inversion of gynecologic origin the causative tumor is of preeminent importance. In acute cases, the cardinal symptoms are hemorrhage, shock and pain. Later, the manifestations of a complicating infection may appear. In chronic inversion, the symptoms are those of marked uterine prolapse plus those of menorrhagia and metrorrhagia. This is made from the objective findings exclusively. In obstetrical inversions, diagnosis is almost always very easy. Vaginally, a large, soft, pear-shaped, bleeding tumor is found, with the placenta attached in about half the cases. Abnormally, no corpus is found, and in its place there is a cup-like depression. In gynecologic cases, the diagnosis of inversion due to a fibroid frequently is very difficult. The chief points are, first, the shortening of the uterine canal produced by inversion as compared with the lengthening caused by a fibroid; and secondly, the indentation produced by the inversion on the peritoneal surface. The mortality in acute cases in recent years has been about 35 per cent.; in chronic ones, about 6 per cent.

In all acute and in most chronic cases, manual reposition should be tried. In most of the former, if undertaken early, and in many of the latter, this procedure is successful. If it fails, repositors, etc., may be used, but only for a short time. If these are unsuccessful, one should resort at once to some operative method, the one of choice being colpohysterotomy. This operation stands preeminent in the treatment of difficult cases of uterine inversion, on account of the facility of its performance and its success in accomplishing the reduction of the inversion, and also because of the practically complete absence of any mortality. The uterine incision should be made at first through the cervix only, and later be extended as far into the corpus as necessary to accomplish reposition. In inversion due to tumor, the treatment is mostly that of the causative fibroid. After this is removed, if the uterus still remains, in about one-third of the cases spontaneous replacement occurs, while in the other instances reduction is accomplished usually without difficulty by non-operative methods.

102. **Silver Iodid Emulsion.**—A 5 per cent. silver iodid emulsion is safely and satisfactorily used by Kelly and Lewis to inject the bladder, ureters and renal pelvis for radiographic work. It casts as dark a shadow as does an equal amount of a 10 per cent. collargol solution. It is antiseptic, non-irritant, clean and inexpensive. Its concentration can be accurately determined and regulated. It possesses the great advantage of not being a proprietary preparation.

Vermont Medical Monthly, Burlington

June, XIX, No. 6, pp. 131-156

107 Carbonic Acid Snow As Used in Obliterating Angiomas; with Case Report. G. S. Foster, Manchester, N. H.
108 Study of Sensory Aphasia. W. L. Wasson, Waterbury.
109 Diagnosis of Diseases of Blood. B. H. Stone, Burlington.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 28, I, No. 2739, pp. 1357-1404

1 *Diagnosis and Treatment of Dysentery. C. P. Lukis.
2 Miners' Nystagmus. T. L. Llewellyn.
3 Amino-Acids and Sugars in Rectal Feeding. A. R. Short and H. W. Bywaters.
4 Experiences of Medical Adviser under Insurance Act. B. M. H. Rogers.
5 "Controlled" Use of New Tuberculin in Treatment of Pulmonary Tuberculosis. A. C. Watkin.

1. **Diagnosis and Treatment of Dysentery.**—Lukis states that Forster of India prepared his vaccine with the Shiga-Kruse bacillus, which he uses for all types of bacillary dysentery. He uses it in both acute and chronic cases, but in acute cases it is contraindicated from the fourth to the twenty-first day. After this period inoculation may be commenced with an interval of ten days between each dose. In both acute and chronic cases the dose recommended for an adult male is: first dose, 0.1 c.c.; second dose, 0.2 c.c.; third dose, 0.3 c.c.; fourth dose, 0.4 c.c. Females and children are given proportionately smaller doses. According to Forster these doses produce little or no negative phase and in fourteen days the immunity is considerably raised, while a course of four doses usually suffices to get rid of all bacilli and to prevent the patient from becoming a chronic "carrier." Antidysenteric serums may be either monovalent or polyvalent, but the highest degree of immunity is conferred when the Shiga-Kruse bacillus is used in their preparation. These serums are of the greatest value in the acute stages of the disease, especially if there be profound and prolonged toxemia unaffected by other forms of treatment.

The dosage depends on the strength of the serum used. But it is necessary to give it in large doses, the injections being made with the usual antiseptic precautions under the skin of the abdomen or flank. Thus the serum from the Lister Institute should be given in 20 c.c. doses twice, or even, in severe cases, four times daily. The interval between the injections should be six hours. They need not, as a rule, be continued after the second or third day, and the only untoward effects likely to follow are urticarial rashes and other anaphylactic phenomena such as pain in the joints, etc. Grave anaphylactic phenomena only occur when the interval between the doses is long or irregular. The remedy, therefore, is regular and systematic administration of the serum. When the serum treatment cannot be carried out the saline treatment is, in Lukis experience, the most useful. Indeed, in many early cases it suffices for a complete cure. Two drams each of magnesium sulphate and sodium sulphate dissolved in 1 ounce of water should be administered and then half doses of a similar mixture should be given every hour or every two hours until the motions become feculent, after which it is given every three or four hours for another twenty-four hours and then discontinued; but do not stop it too soon, otherwise the patient will still suffer from fecal retention, even though he be passing a large number of stools containing only blood and mucus.

Clinical Journal, London

June 4, XLII, No. 9, pp. 129-144

6 Salpingo-Oöphoritis. T. G. Stevens.
7 Auricular Fibrillation. C. E. Zundel.
8 Scope of Salicylate in Treatment of Acute Rheumatism. R. Miller.

June 11, No. 10, pp. 145-160

9 Non-Operative Treatment of Malignant Disease. T. J. Horder.
10 Causes and Treatment of Headache. J. A. Lindsay.
11 Case of Swelling and Ulceration of Tongue. L. McGavin.

June 18, No. 11, pp. 161-176

12 Treatment of Arteriosclerosis and High Tension. F. de H. Hall.

June 25, No. 12, pp. 177-192

13 Trend of Thought in Recent Pharmacologic Research. W. Whitla.
14 Absence of Abdominal Respiratory Movement As Indication of Pericarditis. W. E. Wynter.
15 Puerperal Insanity. W. H. Stoddart.

Indian Medical Gazette, Calcutta

June, XLVIII, No. 6, pp. 217-252

16 Years' Medicolegal Work in Calcutta Morgue; 1912 (Including Comparative Figures for Triennium 1910-1912). O. S. Moses.
17 *Agchylostoma Ceylanicum, a New Human Parasite. C. Lane.
18 Mild Epidemic of Jaundice. G. D. Franklin.
19 Spirillar Fever in Darjeeling District, 1912. A. M. Jukes.

17. **Agchylostoma Ceylanicum.**—In a batch of thirty prisoners individually examined and treated with Manson's mixture, Lane found that in three of them there were some ankylostomas present which were shorter and thinner than are adult specimens of *A. duodenale.* On subjecting them to microscopic examination it was evident that they were specimens of *A. ceylanicum. Agchylostoma ceylanicum* is a constant parasite of healthy domestic animals in parts of India.

Journal of Obstetrics and Gynecology of British Empire, London

May, XXIII, No. 5, pp. 265-352

20 *Ovarian Secretion. A. L. McIlroy.
21 *Menstrual Molimina. C. Chisholm.
22 *Localizing Peritonitis of Puerperal Origin. H. T. Hicks.

20. **Ovarian Secretion.**—The ovary has a dual function—the production of ova, and the elaboration of an internal secretion or secretions. It is of the nature of a ductless gland, carrying out its function independently of its vascular or nervous supply. The ovary controls the nutrition of the genital organs and mammae. Removal of both ovaries before sexual maturity causes an arrest in the development of the genital organs and mammae, prevents the onset of *menstruation* or pro-estrum. The infantile type is maintained and the secondary sexual characters are not well marked. Retardation of the ossification of the long bones has been observed There is no effect on the growth and general nutrition (Carmichael and Marshall). Removal of both ovaries after sexual maturity causes atrophy of the genital organs and mammae, cessation of menstruation of pro-estrum, and increased deposit of fat. Removal is frequently followed by certain nervous phenomena characteristic of the menopause. Removal of both ovaries during early pregnancy causes abortion to take place. Removal of one ovary causes compensatory hypertrophy in the remaining organ independent of pregnancy or estrus. Abortion does not take place as a consequence of removal of one ovary.

The corpus luteum is concerned with the embedding and nutrition of the ovum and with metabolism. It controls the blood-supply of the uterus. The interstitial cells are increased in size during pregnancy and estrus and are concerned with the nutrition of the genital organs and the internal secretion of the ovary. Transplantation of ovarian tissue after castration prevents the occurrence of atrophy in the genital organs and the cessation of menstruation. Menstruation depends entirely on the presence of ovarian tissue. It is a preparation on the part of the uterine and tubal mucosa for the reception of a fertilized ovum and corresponds to the period of pro-estrum in animals. The menstrual discharge is the evidence of metabolic processes by means of which some unknown chemical substances are eliminated from the organism. Menstruation begins at puberty and ceases at the menopause, when the ovaries become atrophied. It ceases after removal of both ovaries, but can be made to recur by transplanting ovarian tissue into another situation. The correlationship between menstruation and ovulation is unknown. The nutrition of the uterus is dependent on the presence of ovarian tissue. Removal of uterine secretion has no effect on the ovaries.

Ovarian extracts have been found of use in the treatment of chlorosis, amenorrhea, obesity and menopausal symptoms. Much depends on the condition of the ovaries from which the extracts are prepared and the mode of preparation. Most clinicians agree that the extract of the corpus luteum has the most therapeutic value. Information as to the influence of ovarian secretion on metabolism is as yet unreliable. Ovarian secretion is said to prevent the onset of obesity, and to increase the respiratory interchanges. Most observers agree as to no change occurring after castration in the nitrogen metabolism. Several authors maintain that the ovaries have a marked influence on the excretion of calcium. Retardation of the coagulation period of blood has been found in diminished ovarian function.

21. **Menstrual Molimina.**—From a careful study of this subject by *Chisholm* it appears that the majority of girls commence menstruation painlessly. A number have discomfort, some occasionally, some regularly for a time varying from one hour to two days just before and with the commencement of the menstrual period. This discomfort is often slight in character. A few have more severe pain, either regularly or occasionally. A very small number, i. e., 1.8 per cent., are incapacitated. A small number, i. e., 1.2 per cent., have discomfort or pain for a longer period than one or two days during the whole time of menstruation. The discomfort in girls is most frequently local in character, and when there is serious general disturbance it is accompanied by severe local pain, and probably proceeds from some local abnormality, congenital or acquired. The best developed girls appear less likely to have menstrual disturbance. This freedom from discomfort is not affected by hard mental work carried on under healthy conditions.

22. ***Localizing* Peritonitis of Puerperal Origin.**—In treating patients with local peritonitis, following a septic puerperium, Hicks has come to the following conclusions: Simple drainage through Douglas' pouch should always be adopted when the local area of infection is within reach. Any attempt at radical removal of a pyosalpinx or an infected ovary is certain to be followed by a severe general septic condition which may be quickly fatal. The parametrium is nearly always also infected, and, although the broad ligaments may not contain pus, the lymphatics are in such a state that they

will pick up bacteria readily if opened in the course of removal of the tubes or ovaries. In cases in which simple drainage is not possible it is best to wait. The patient must be watched carefully for any signs of extension of the infection. The longer one waits, the less virulent will be the organisms, and, further, by waiting the natural protection against a general invasion may have time to develop. In all cases Fowler's position should be adopted. The complications to be feared if a radical operation has been undertaken are not the ordinary complications which are familiar to all surgeons engaged in abdominal work, but septicemia in its worst form.

Lancet, London

June 28, I, No. 4687, pp. 1787-1848

23 *Relation of So-Called "Influenza" to Bronchitis and Tuberculosis. A. J. Jex-Blake.
24 Dietetic Treatment of Gout. A. E. Garrod.
25 *Preparation and Use of Subgallate of Bismuth Gauze. E. A. R. Newman.
26 Two Cases of Vein-Grafting for Maintenance of Direct Arterial Circulation. J. H. Pringle.
27 Sensitized Vaccine in Acute Bacterial Infection. M. H. Gordon.
28 *Practical Method of Growing Acne Bacillus from Comedo For Preparation of Vaccines. T. H. C. Benians.

23. **Relation of Influenza to Bronchitis.**—Jex-Blake advises that one should be slow to content oneself with diagnosing any acute febrile catarrh of the respiratory system as "influenza" unless the disease is about in epidemic form, or unless the patient's discharges show a pure sulture of the bacillus influenzae. Unless these precautions are observed it is probable that the attack will prove to be an acute infectious catarrh due to some other microbe and not to the influenza bacillus. The microbes that do appear to cause "influenza" are the tubercle bacillus, the pneumococcus, *Micrococcus catarrhalis*, staphylococci and streptococci. To diagnose "influenza" rashly and readily entails a great risk of overlooking the early stages of pulmonary tuberculosis—a most serious matter for the health of the patient and for the credit of the medical practitioner. The outlook and prospects of recovery in tuberculosis of the lungs depends very largely on getting suitable treatment applied at the earliest possible moment, before the pulmonary lesions have advanced far.

Jex-Blake's figures show that in no less than 112 out of 416 unselected cases of tuberculosis of the lungs the onset of the disease coincided with an attack of "influenza"; the frequency with which this occurs shows that it cannot be a mere coincidence. It is obvious that to make a diagnosis of "influenza" when the case may very well be one of pulmonary tuberculosis—as, indeed, it appears to have been in 264 out of 1,058 instances—must give a false sense of security to both patient and medical man, and must make the latter prone to overlook the more serious disease. Yet the two can be distinguished from one another with certainty, if not by the physical examination of the patient, at any rate by the examination (or by repeated examinations, if need be) of the sputum for tubercle bacilli. In other words, one ought to make sure that pulmonary tuberculosis has been excluded before resting satisfied with the diagnosis of "influenza" or "influenzal bronchitis."

25. **Use of Bismuth Gauze.**—Subgallate of bismuth gauze has been tested for eight months in a hospital containing fifty surgical beds, and from the experience thus gained Newman says that it serves all the purposes for which iodoform gauze used to be advocated. It is definitely inimical to sapremic infections and quickly abolishes the fetor of foully septic wounds. He uses it for packing suppurating cavities and sinuses and dressing granulating sores, and finds that it checks and shortens suppuration. Its use on aseptic operation wounds is pointless. Compared with iodoform gauze, its advantages are summarized thus: Stability and consequent sterilizability; absence of odor; non-toxicity; no tendency to dust out; cheapness; equal if not greater efficiency; equally easily recognizable—an advantage it possesses over other bismuth gauzes.

The practical details of preparation are as follows: 1. Wash the gauze thoroughly in soap and hot water and rinse in several changes of clean water; dry. 2. Cut the dry gauze up into convenient lengths for preparation (pieces of 1 yard or 4 yards in length are convenient in practice), and ascertain the weight of one such length. The quantity of the salt is then calculated. 3. To get the exact quantity of fluid required saturate one such length in water, pressing it lightly to get rid of any great excess. Then squeeze out the fluid as completely as possible, collect and measure it. If too little fluid is used it is difficult to get the salt evenly diffused; if too much, the cloth drips, and some salt is lost, with an unnecessary waste of rather expensive materials. 4. Make an emulsion from the above data, mixing the salt with the glycerin first and then adding the spirit, stirring it briskly the while with a glass rod. 5. While still stirring it immerse the gauze, just moistened, as quickly as possible, and thoroughly knead it to get a uniform diffusion. To ensure this it is important that the gauze be previously just moistened; theoretically, spirit should be used for this, but in practice water does equally well and saves expense. 6. Hang up or lay out to dry. When dry fold longitudinally three times—this gives an eight-fold gauze—and roll up. 7. Sterilize and store in a dust-proof receptable. Incidentally, Newman says, all antiseptic gauzes may be prepared in this way, varying the ingredients and proportions at will. Plain water is only necessary for cyanid gauze or for soluble salts.

28. **Acne Bacillus Grown from Comedo for Vaccines.**—In the preparation of some twenty autogenous vaccines by his method Benians has only failed once to obtain a satisfactory growth of the acne bacillus. The method consists merely in growing the organism in a tube of neutral broth, the surface of which has been covered with about half an inch of sterile olive oil or sterilized ordinary lard. In practice a comedo is expressed into a sterile glass tube of small bore, the edges of which have been previously well rounded in the flame. The comedo is dropped into the broth and the oil or melted lard added with a pipet. The comedo should be made to sink to the bottom, otherwise the growth may cling to the oil on the surface of the broth. After twenty-four or forty-eight hours a slight turbidity of the broth is noticeable, and this is due to the presence of *Staphylococcus albus*; the growth of this organism, however, does not proceed any further.

After three or four days' incubation the acne bacillus growth begins to show as a granular deposit at the bottom and sides of the tube, or sometimes in the form of small granules clinging to the oil. Films of the deposit made at this time usually show a mixture of about equal numbers of cocci and bacilli. At the end of a week or ten days' growth the number of cocci is relatively quite insignificant. Films of the deposit now made show a few isolated and scattered cocci and large masses of bacilli mostly of a uniform size. Often there is a great preponderance of short oval or coccoid forms; these are readily differentiated from the staphylococcus by their shape and disposition. The bacilli clinging to the oil are generally larger and thicker than those in the deposit. The vaccine can be made up usually on the eighth or tenth day. The deposit is best removed with a Pasteur pipet; it readily forms a uniform emulsion when mixed with saline and shaken vigorously in a bulb for a short time. The bacilli should be thrown down in the centrifuge free from the broth medium; this supernatant fluid is then pipetted off and the bacteria reemulsified in saline.

Medical Press and Circular, London

June 4, XCV, No. 3865, pp. 593-622

29 Leukocytes As Aid To Diagnosis and Prognosis. A. Goodall.
30 Cradle of Pharmacy. F. M. Sandwith.
31 Life, Evolution and Instinct. C. A. Beck.
32 Amylene Carbamate—Synonym Aponal: A New Hypnotic. S. Hallows.

June 11, No. 3866, pp. 623-648

33 Late Puerperal Complications. A. Routh.
34 Diabetes of Hepatic Origin. Castaigne.
35 Three Cases of Reflex Cough. M. Collier.
36 Cradle of Pharmacy: Opium. F. M. Sandwith.

June 18, No. 3867, pp. 649-673

37 Acute Inflammation of Bone. A. H. Tubby.
38 Syphilitic Diseases of Joints and Bones in Children. O. Addison.
39 Treatment of Atrophic Rhinitis, Etc., by Doriform. W. Hobson.
40 Arsenic. F. M. Sandwith.

June 25, No. 3868, pp. 674-700

41 Curability of Diabetes. R. Saundby
42 Enucleation of Tonsils. T. J. Faulder.
43 Roentgenotherapy of Hypertension. P. Rostaine.
44 Mercury. F. M. Sandwith.

Archives des Maladies de l'App. Digestif, Paris

June, VII, No. 6, pp. 301-360

45 Colitis due to Lambl's Flagellated Parasite. (Colite ulcéreuse due au Lamblia intestinalis. Perforation. Mort.) C. Fairise and C. Jacquot.
46 Therapeutic Action of Powders by the Mouth due mainly to their Adsorption of the Digestive Ferments. Wasserthal and R. Goiffon.
47 Radiology of the Digestive Apparatus. R. Glénard.

Bulletin de l'Académie de Médecine, Paris

June, LXXVII, No. 22, pp. 573-580

48 Ethyl-Chlorid General Anesthesia. (Sur la chloréthylisation à doses faibles et continues par le procédé de la compresse.) J. Vanverts and C. Monod.

Bulletins de la Société de Pédiatrie, Paris

May, XV, No. 5, pp. 229-277

49 Appendicitis in Infants. (L'appendicite chez les tout petits.) M. Nageotte-Wilbouchewitch and L. Ombrédanne.
50 Treatment of Lateral Curvature of the Spine. (Traitement de la scoliose par la méthode d'Abbott.) J. Calvé, L. Lamy and Lance.
51 Anatomic Findings Four Months after Reduction of Congenital Dislocation of the Hip Joint. (Pièce de luxation congénitale réduite à l'âge de 20 mois.) M. Lance.
52 Indications for Heliotherapy. (Note sur les éléments d'appréciation des indications de l'intensité et de la durée utiles de la cure solaire dans les affections tuberculeuses de l'enfance.) d'Oelsnitz.
53 Masturbation Cause of Transient Albuminuria. (Sur une singulière albuminurie clinostatique.) H. Dufour and P. Muller.
54 Tuberculous Fetus Found in Uterus of Woman who had Died from Tuberculosis. (Transmission de la tuberculose de la mère au fetus.) H. Dufour and J. Thiers.

Journal de Médecine de Bordeaux

June 22, XLIII, No. 25, pp. 397-412

55 *Iodin Fumes in Local Treatment. (L'enfumage iodé.) Bargues.
56 Treatment of Tuberculous Joint Disease. (Immobilisation des arthrites tuberculeuses et héliothérapie.) J. Doche.

55. **Iodin Vapors in Therapeutics.**—Bargues reports his experience with the local application of iodin fumes according to the method described in The Journal, March 23, Aug. 10 and Nov. 16, 1912, pages 896, 488 and 1830. Bargues found the procedure too irritating for the urethra, and abandoned it after disagreeable experiences in two cases of urethritis. The iodin fumes dry up superficial wounds and arrest suppuration and pain, and consequently the method is excellent when a superficial antiseptic action is desired. He does not approve of keeping up the application after this result is obtained. Extremely useful during the stage of suppuration, when the tissues begin to heal the iodin fumes are superfluous and do actual harm. The method has proved of great assistance in syphilitic sores and erosions and various ulcerations on the genital organs and legs, especially old varicose ulcers. The fumes act only on the surface which they reach, and they do not penetrate into the tissues. Hence the local action is less intense than that of tincture of iodin.

Journal d'Urologie, Paris

June 15, III, No. 6, pp. 705-868

57 Parallel Rhythmic Ups and Downs of the Albuminuria, Blood-Pressure, Hydremia and Retention of Chlorids in a Case of Chronic Nephritis. (Rythme spécial de la rétention chlorurée par échelons, au cours d'une néphrite chronique avec syndrome chlorurémique.) F. Widal and R. J. Weissenbach.
58 Indications for Operative Treatment in Chronic Nephritis. A. Jousson.
59 Slight Strictures of the Ureters. (Etude clinique des rétrécissements de l'urétère.) M. Desnos.
60 Recurring Profuse Hematuria with Ureter Colic Only Sign of Cancer Large as a Cherry in Left Kidney. E. Jeanbrau and E. Etienne.
61 Tuberculous Process in Undescended Testicle. J. Ferron.
62 Multiple Large Renal Calculi Causing Absolutely no Symptoms; Three Cases. Pillet.
63 Posterior Urethroscopy. R. Henry.
64 Abortive Treatment of Gonorrhea. J. Janet.

Lyon Médical, Lyons

June 15, XLV, No. 24, pp. 1277-1332

65 Pneumothorax as Complication of Tuberculous Empyema; Three Cases. L. Bouchut and Gravier.
66 Snapping Knee. (Le genou à ressort.) Plisson. Commenced in No. 23.

June 22, No. 25, pp. 1333-1388

67 The Urea and Nitrogenous Bodies in the Blood in Typhoid. A. Morel and G. Mouriquand.
68 The Leukocytes and Disintegration of Nerve Tissue. E. Malespine.

Revue de Gynécologie, Paris

XX, Nos. 4-5, pp. 401-554

69 *Malignant Chorio-Epithelioma. R. Proust, X. Bender, A. Pollosson and H. Violet.
70 Incontinence of Urine and Prolapse of the Vagina, M. Muret.

69. **Chorio-Epithelioma.**—Proust and Bender discuss the pathologic anatomy and pathogenesis of chorio-epithelioma while Pollosson and Violet discuss the clinical aspect of this form of malignant disease. The former pass in review all the cases of which they could find record whether situated in the uterus, ovary or tube as well as outside of the genital apparatus or developing in teratomas. Pollosson and Violet's article has appeared elsewhere and was summarized in these columns July 19, abstract 37.

Revue Mens. de Gynécologie, d'Obstétrique et de Pédiatrie, Paris

May, VIII, No. 5, pp. 309-372

71 Spontaneous Delivery with Obstructing Fibroma; Three Cases. (Accouchement spontané dans quelques cas de fibromes "praevia.") Audebert and Fournier.
72 *Ovarian Tumors and Pregnancy. M. Muret.

72. **Ovarian Tumors Complicating Pregnancy.**—Muret has encountered a dozen cases of this kind; in seven the tumor was first noted during the course of the pregnancy; in three not until delivery was under way and in two during the puerperium. In the pregnancy cases two of the patients refused any operation and one of them during a subsequent pregnancy required an emergency operation for torsion of the pedicle. In three cases he removed the ovarian tumor by a laparotomy but in another case he was able at the sixth month and in another six weeks before term to push the ovarian tumor up and out of the way, so that it caused no trouble. All the children are living except one born at the seventh month. He advocates pushing the tumor up out of the way, the patient in the Trendelenburg position and under the influence of a general anesthetic, giving opium or morphin immediately afterward. This advice applies of course only when the ovarian tumor is not causing serious trouble and the pregnancy has reached the last months. If the tumor can thus be pushed out of the way, the patient must be kept under surveillance until term. If it proves impossible to push the tumor out of the way, he advises to wait until the end of the pregnancy or until delivery before attempting its operative removal. The tumor should also be pushed up out of the way, if possible, at term to permit delivery.

Semaine Médicale, Paris

June 18, XXXIII, No. 25, pp. 289-300

73 Bradycardia in Infectious Diseases. H. Roger.

Archiv für klinische Chirurgie, Berlin

CI, No. 3, pp. 573-844. Last indexed July 5, p. 68

74 *Mammary Cancer. A. Salomon.
75 *Radical Operation for Postoperative Peptic Ulcer in the Jejunum. H. v. Haberer.
76 *Operative Treatment of Intractable Constipation. V. Schmieden.
77 *Splenectomy for Malarial Disease of the Spleen. N. W. Koplow.
78 Experimental Research on the Functions of the Choroid Plexus and Meninges of Brain. E. Goldman.

79 Brain, Spine and Nerve Injuries at the Seat of War. (Die Gehirn, Rückenmark- und Nervenverletzungen im Deutschen Rothen Kreuz-Lazarett in Belgrad.) R. Mühsam.
80 Arc Osteotomy. (Ueber bogenförmige Osteotomie.) E. Streissler.
81 Congenital Stricture of the Urethra. (Angeborene Harnröhrenverengerungen.) B. Riedel.
82 *Deforming Osteochondritis in the Young. G. Perthes.
83 Operative Correction of Pseudarthrosis of the Tibia. A. Wittek.
84 *Operative Treatment of Embolism in the Lung. Schumacher.
85 *Direct Massage of the Heart. L. Wrede.

74. **Carcinoma of the Breast.**—Salomon writes from the clinic at Berlin in charge of Bier to relate the results of study of the anatomic details of cancers of the breast as compared with the clinical details and the ultimate outcome. He has examined about 3,000 specimens, but this article is based on 200 cases of mammary cancer with the ultimate outcome after operation. About 20 per cent. of the 108 patients traced to date were operated on only two or three years ago, the interval in the other cases was longer. Forty patients succumbed to local or regional recurrence, that is, 38.5 per cent., and 23.1 per cent. to internal metastasis, without local recurrence. A large number of typical cases of the various types of cancer are described in detail with illustrations. He made a special feature of roentgen-ray examination of the excised breast after it had been removed. The rays in many cases revealed that the excision had been carried far into sound tissue while in others they showed that the limit of malignant disease had not been reached. He emphasizes the practical importance of distinguishing between nodular infiltrating, diffuse infiltrating and the encapsulated types. The large alveolar soft cancers grow almost exclusively into the milk ducts and parenchyma of the gland and infiltrating cancers often invade the milk ducts. The roentgen-ray findings in the excised breasts demonstrate that at the very least the incision must be three finger-breadths from the extreme outer limits of the palpable new growth. The prognosis of the large alveolar forms of medullary cancers is about the same as that of solid cancers, namely, 40 per cent. recoveries, but the small alveolar soft cancers all proved speedily fatal in his experience (eight cases). The adenomacarcinomas formed about 9 per cent. of his total material, and a third were of the malignant adenoma type. They are distinguished by the long duration of the trouble, the rare metastasis in the lymph-nodes, the sharp delimitation, and in the papilliferous form by a blood-stained discharge from the nipple and hemorrhagic discoloration of the skin. The prognosis for this type is extraordinarily good, 71.5 per cent. recovering of his eighteen patients in this group. The prognosis is very unfavorable in what he calls infiltrating mammary cancer; strands extend from it linking it with the lymph-nodes in the axilla, and the lymph-nodes with each other. This form of cancer affects most frequently younger women, and it occurs in connection with pregnancy and lactation. In about half the cases the entire breast is invaded and in 25 per cent. recurrence follows in the other breast. The percentage of recovery is only about 9 per cent.

He found that from 10 to 15 per cent. of the true cancers were movable, which renders differentiation difficult. In such a case the entire tumor must be excised and examined under the microscope, as very often when cancer develops from chronic mastitis the actual malignant lesion is very small, and the main mass of the tumor consists of proliferating glandular tissue. The movable tumors are generally relatively benign, slowly growing growths with a tendency to encapsulation: 75 per cent. recoveries without recurrence for three years to date is his record for this type of cancer. On the whole, the cancers displaying the least anaplasia gave a favorable prognosis, the most anaplastic forms (namely, the small-celled soft and the scirrhous) give a grave prognosis. ("Anaplasia" is defined as the change in the cell forerunning its response to proliferative stimulus.) His total for all classes is recovery without recurrence for three years in 33.5 per cent. of the 200 operative cases.

75. **Postoperative Peptic Ulcer.**—Haberer has encountered three cases of peptic ulcer in the jejunum; they were the only ones in his 248 gastro-enterostomy operations. The one feature common to all the peptic ulcer cases was that there had been symptoms suggesting gastric ulcer for several years before the operation. This seems to suggest that the old stomach trouble had kept up a vicious circle predisposing to peptic ulcer later. In each case both shanks of the loop and the anastomosis in the stomach all had to be resected and the outcome was exceptionally good in all his cases. The reports in the literature of the discouraging effects of merely palliative treatment confirm the wisdom of the radical operation. In each case the gastro-enterostomy had been posterior, with a short loop; the peptic ulcer developed soon afterward in two cases and in the third not until after three or four years of relative health. The ulcer in each was on the efferent loop opposite the gastro-enterostomy, close to the attachment of the mesentery. The patients since the resection have been freed from all disturbance from this source.

76. **Operative Treatment of Intractable Constipation.**—Schmieden is delighted with the outcome of the method he applied to short-circuit part of the transverse and descending colon which was in a condition of pronounced atony and moderate dilatation. The patient was a man of 39. The mesentery of the large intestine was also congenitally abnormally long. Conditions thus invited Hirschsprung's disease, but Schmieden succeeded in short-circuiting the intestine while leaving approximately normal conditions in the excluded portion. This he accomplished by making an anastomosis between the sigmoid flexure and the middle part of the descending colon. The lower half of the colon was then drawn up and the top of the loop thus formed was sutured to the middle of the transverse colon. He gives illustrations showing how this provided three routes for the feces, (1) directly from the right half of the transverse colon at a right angle into the lower fourth of the descending colon which provided a straight outlet down into the rectum; (2) the stool could pass through the next to the lower fourth of the descending colon and out through the anastomosis with the sigmoid, likewise a vertical outlet, or (3) the stool could follow the natural route through the rest of the transverse colon, past the splenic flexure and down through the upper half of the descending colon to its anastomosis with the sigmoid flexure. Roentgenoscopy shows that all three routes are utilized to some extent although the main outlet is through the passage first reached by the stool. He thinks this technic is very promising.

77. **Splenectomy for Malaria.**—Kopylow has removed the enlarged malarial spleen in thirteen cases and has found records of 187 others in the literature, bringing to 200 the number of cases in which this operation has been done. The mortality for the total was 25 per cent., and three of his thirteen patients succumbed to the progress of lesions which could not be arrested by the removal of the spleen. Six of the patients were men and all were between 18 and 50. All the patients had traveled far to seek relief for their intolerable disturbances and when reexamined from six to twelve months after the splenectomy ten were found well, with full earning capacity. To this group he adds another workman of 25 who had had his spleen removed six years before and who has long been in good health and hard at work. Kopylow thinks that the spleen should be removed as a routine measure in malarial countries when it is very large, painful and immovable and persists thus, refractory to internal treatment. Also when the spleen is much enlarged and has become movable. With a wandering spleen the operation is comparatively simple and easy, while the pedicle is liable at any moment to become twisted with its train of dangers. Immediate splenectomy is of course imperative in case of rupture of the spleen or torsion. At the same time Kopylow advises to refrain from splenectomy if there is much cachexia, hydremia and the hemoglobin is below 40 per cent.; or if there is considerable cirrhosis and atrophy; if the general health is poor and there is trouble in the digestive and urogenital organs; also if there are very extensive adhesions especially with the stomach and diaphragm. This last was responsible for the death of one of his patients, the viscera being so welded together by adhesions

that in removing them the stomach wall was injured and it perforated later with fatal peritonitis. The range of the mortality at different clinics is between 7 and 60 per cent. In one of his patients, a man of 30, the spleen extended to the symphysis and 5 cm. beyond the median line and caused severe and constant pain. It weighed 2,020 gm. and measured 33/18/8 cm.

82. **Harmlessness of Deforming Osteochondritis in Children.**—Perthes has the unusual task of exonerating the tubercle bacillus from responsibility for a certain hip-joint trouble of which it has been accused. The trouble is a destructive process in the interior of the head of the femur, and the joint itself is not affected. It thus differs from deforming arthritis. The cause seems to be some disturbance in the nourishment of the head of the femur, probably from some injury to the artery supplying it, possibly of traumatic origin. The first signs of trouble appear between the ages of 5 and 10 and only in one hip. The child does not complain of anything wrong and plays as usual, but the parents notice that he limps. The limp and gait may become that of unilateral congenital dislocation of the hip joint, but the ultimate outcome in Perthes' twenty-one cases and in the few similar ones in the literature shows that the parents can be reassured that the trouble is comparatively harmless and that the child will outgrow the limp and be left with no appreciable shortening of the leg. Nearly all the patients were boys. The limb can be actively and passively flexed as in normal conditions and there is no reflex rigidity of muscles, but the limb cannot be abducted and rotation is difficult. There are no tender points or crepitation but the gluteal muscles show some tendency to atrophy and the roentgen rays reveal softening or total destruction of certain areas in the bone substance of the head; the epiphysis as a whole flattens out and the head becomes deformed. The acetabulum gradually adapts itself to the distorted shape of the head and conditions clinically right themselves. Two of his patients were brothers, and Eden encountered the affection in a father and son, Calvé in a brother and sister and Küttner in three generations.

In twelve of Perthes' last series of fifteen cases treatment had been applied based on the erroneous diagnosis of tuberculous hip-joint disease. This might do no harm if there is pain, but it should not be kept up long for fear of atrophy of muscles. Extension permitting massage might be better on this account. In Perthes' cases pain was rare and slight. There was no history of known trauma in his cases but direct visual inspection in one case confirmed the non-tuberculous nature of the lesion and the non-involvement of the cartilage of the joint. In two of his cases five and thirteen years have elapsed since the first symptoms and the hip joint and gait seem quite normal at present. If the limb is held in an unnatural position this might be corrected, but whether by extension or by reduction under general anesthesia will have to be determined by further experience. He tried the latter method in one case with good effect. The relative harmlessness of this subchondral affection renders operative measures unnecessary.

84. **Operative Treatment of Embolism of the Lung.**—Schumacher compares four cases of pulmonary embolism in which he operated with three other cases in which no operation was attempted—all the seven patients dying, and then compares this material with the nine other cases he has found on record in which operative treatment was applied. He also reports experimental work along this line on dogs. He thinks we are justified in attempting to remove the obstructing embolus as Trendelenburg's and Sievers' patients lived afterward for thirty-seven and fifteen hours and Kruger's for over five days, succumbing finally to purulent pleuritis. But it is useless to attempt operative removal of the embolus if there is heart disease or wasting sickness. The special indications, technic, etc., are discussed.

85. **Direct Massage of the Heart.**—Wrede has applied massage directly to the heart of dogs and examined them afterward to learn the amount of injury thus inflicted on the organ. This with his clinical experience has convinced him that to start the heart to beating is far from being all that is needed—the center in the medulla must be started to functioning also, and this is accomplished by ample respiration. Consequently ample artificial respiration must be kept up systematically as being equally important with the massage of the heart. He is certain that the massage of the heart has failed in many cases simply because provision was not made for adequate ventilation of the lungs at the same time. In other cases the failure may have been due to the fact that the anesthetic could not be loosened up from its grip on some of the vital organs; in others perhaps to the fact that the interval between the stoppage of the heart and the starting up anew of the circulation was too long for certain organs; their vitality had been too long impaired. Wrede massaged the heart in one clinical case for ninety minutes before it started to beat naturally; the patient lived for three days and then died from the injury to his heart which possibly might have been avoided. One of the most important points about massaging the heart is to drive the blood into the coronary arteries so as to feed the heart itself. The harder it is to pump the blood into the aorta, the easier it flows into the coronaries. Hence everything should be done to increase the pressure in the aorta; epinephrin will aid in this and mechanical measures, such as lowering the shoulders, sequestrating the blood in the limbs with Esmarch bands, compressing the abdominal aorta and injecting a fluid into the aorta. Epinephrin drove up the blood-pressure almost invariably, and in some of his experiments even when the massage had been under way for an hour or more.

Berliner klinische Wochenschrift

June 16, L, No. 24, pp. 1097-1144

86 Life of Tissue Outside of the Organism. (Neue Untersuchungen über das selbständige Leben der Gewebe und Organe.) A. Carrel.
87 Non-operative Treatment of Cancer. (Chemotherapeutische Versuche an Krebskranken mittels Selenjodmethylenblau.) A. Braunstein. (Erfolgreiche Behandlung von Gesichtskrebsen durch Einsticheluug von Eisenoxyduloxyd kombiniert mit Arseninjektionen.) H. Spude. (Erfolge der Mesothoriumbestrahlung bei Carcinom.) A. Pinkuss.
88 Present Status of Eclampsia. W. Nagel.
89 Clinical Bases for Normal Physical, Mental and Moral Standards for the Young. (Klinische Grundlagen der Beurteilung von normalen Kindern und Jugendlichen.) W. Cimbal.
90 Direct Absorption of Lecithin in Gastro-intestinal Tract. (Verdauung des Lecithins bei Erkrankungen des Magendarmkanals.) R. Ehrmann and H. Kruspe.
91 Flat-Foot Insoles. (Zur Technik der Plattfusseinlagen.) Wollenberg.

Deutsche medizinische Wochenschrift, Berlin

June 12, XXXIX, No. 24, pp. 1129-1184

92 Twenty-Five Years of the Public Health Service in the German Empire. (Die öffentliche Gesundheitspflege im Deutschen Reiche seit dem *Regierungsantritt* Kaiser Wilhelms II.) W. Buchholz.
93 Origin of Apical Tuberculous Processes. (Aerogene oder hämatogene Entstehung der Lungenspitzenphthise?) Baemeister.
94 *Tubercle Bacilli in Blood-Stream. (Zum Vorkommen von Tuberkelbazillen im strömenden Blut.) F. Göbel, Brandes and C. Mau.
95 *Diagnosis of Tuberculosis of Both Kidneys. (Zur Diagnose der doppelseitigen Nierentuberkulose.) L. Casper.
96 Uranil Test for Uric Acid in the Blood. (Zur Verwertbarkeit der Uranilfällung für *den* Harnsäurenachweis im Blut.) A. Oszacki.
97 Removal of Set of False Teeth from Esophagus after Incising the Neck, without opening the Esophagus. (Entfernung eines Gebisses aus der Speiseröhre ohne deren Eröffnung nach seitlichem Halsschnitt—Tracheotomia lateralis.) F. Franke.
98 *Resection of the Stomach. (Magenresektion.) A. Pers.
99 Indirect Transmission of *Varicella.* O. Lentz.

94. **Tubercle Bacilli in the Blood-Stream.**—Göbel found in the blood from dogs and other laboratory animals examined with the Stäubli-Schnitter staining technic the very same bodies which have been heralded as actual tubercle bacilli. He declares that they cannot be tubercle bacilli, neither can they be deposits of the stain. Brandes and Mau state that they found tubercle bacilli in the blood by the above technic in 45 per cent. of forty patients with surgical tuberculosis.

85. **Diagnosis of Bilateral Renal Tuberculosis.**—Casper used to teach that the presence of tubercle bacilli in the urine from both kidneys was an imperative contra-indication to nephrectomy. Later experience has convinced him that an inflamed kidney may permit the elimination of tubercle bacilli in the urine even when there are no tuberculous lesions in the organ. In a personal case reported the left kidney had been removed on account of tuberculosis eight years ago. Six years later a tuberculous process in the bladder was treated by being left in repose, the mouth of the ureter from the remaining kidney being transplanted in the skin. The urine from this kidney contained tube-casts and albumin and also tubercle bacilli virulent for guinea-pigs. The patient was regarded as doomed on account of the supposed tuberculous involvement of the one remaining kidney, but the urine has since cleared up and is apparently sterile now, two years later. Casper's retrospective explanation is that the bladder trouble had induced secondarily a nephritis, and this nephritic condition of the kidney had permitted the bacilli to pass into the urine. As there was a marked turn for the better after the exclusion and healing of the bladder, the nephritis subsided and the kidney became impermeable to the tubercle bacilli whose presence elsewhere in the body is beyond question. Analysis of this case and of similar ones reported by others seems to indicate that the presence of many red and white corpuscles in the urine along with albumin and tubercle bacilli is evidence of a destructive tuberculous process. Tube-casts are generally absent or very scanty and the functional capacity of the kidney is materially reduced even with an incipient tuberculous process. He consequently now states that the discovery of tubercle bacilli in the second kidney does not necessarily contra-indicate nephrectomy unless it is evidence of an active tuberculous process.

98. **Resection of the Stomach.**—Pers has done this operation in twenty-five cases on the presumptive diagnosis of cancer, but in nine instances the trouble was shown by the microscope to have been merely an ordinary ulcer. These patients all recovered and are still living after intervals of from eighteen months to eight years. Two of the cancer patients are also living after five and eight years; the others died in from four months to two and a half years. If there is a tumor in the pylorus region and cancer is beyond question, he advises resection of the stomach only in case the tumor is movable and the adjacent lymph-nodes are not too adherent to the pancreas and no metastases can be detected in the liver, mesenteric lymph-nodes, omentum or peritoneum and there is no pronounced arteriosclerosis. In dubious cases, the question as to ulcer or cancer must be very carefully weighed before proceeding to resection. Gastro-enterostomy is far less dangerous than resection while it may cure the most extensive ulcers. It must also be considered that in case the patient should die, it is difficult to console the family with the suggestion that malignant disease might have developed later, if the findings showed merely an ulcer. On the other hand, if the trouble should actually prove to be cancer, the proportion of recoveries after resection is still so small that it scarcely pays to risk it in the dubious cases. If the tumor is located elsewhere than in the pylorus region his experience shows that it is unwise to attempt resection in the unmistakable and extensive cases, but in the dubious cases with only a small process, he advises excision of the diseased area, either local excision or transverse resection of the stomach.

Jahrbuch für Kinderheilkunde, Berlin

June, LXXVII, No. 6, pp. 629-754

100 *Tetany in New-Born Infants. E. Kehrer.
101 Metabolism of Minerals in Infants. (Zur Kenntnis des Stoffwechsels, bes. der Mineralien im Säuglingsalter.) E. Müller and E. Schloss. (Die Ausscheidung der wichtigsten organischen und anorganischen Nahrungsbestandteile im Kot unter wechselnden Ernährungsbedingungen.) J. Takeno.
102 Experimental Scarlet Fever. W. N. Klimenko.

100. **Tetany in New-Born Infants.**—Kehrer describes six cases of tetany in new-born children observed by him during the past one and a half years. All except one of these recovered under calcium medication: 0.2 gm. calcium chlorid was given from five to eight times daily. The favorable results of this treatment seem to show that the tetany is due to a deficiency of calcium salts.

Medizinische Klinik, Berlin

June 15, IX, No. 24, pp. 939-978

103 *The Changing Views in Regard to Surgical Tuberculosis (Neuere Gesichtspunkte in Diagnose und Therapie der chirurgischen Tuberkulose.) F. König.
104 *Abnormally High Blood-Pressure. (Vorkommen und Bedeutung arterieller Hypertension.) John.
105 *Intradermal Skin Reaction in Guinea-Pigs as Test for Tuberculous Nature of Effusions. R. Hagemann.
106 *Prophylaxis of Diphtheria. G. Jochmann.
107 *Autoserotherapy and Autohemotherapy. (Zur Behandlung mit Eigenserum und Eigenblut.) B. Spiethoff.
108 Technic for Measurement of the Pulse Curve. P. Reckzeh.
109 The Tuberculous at Health Resorts. (Die Tuberkulosebehandlung im Süden und speziell an der Riviera.) P. Schrumpf
110 *Rheumatic Polyneuritis. W. Schulhof.
111 *Sleeplessness. (Zur Therapie der Schlaflosigkeit.) O. Moszeik.
112 Syphilitic Sclerosis of the Aorta. (Ueber die Häufigkeit der syphilitischen Sklerose der Aorta relativ zur gewöhnlichen Atherosklerose und zur Syphilis überhaupt.) F. Lenz.

103. **Surgical Tuberculosis.**—The first point which König makes is that the only way to judge accurately of the efficacy of any method of treatment is to keep the patients for years afterward under supervision. This is particularly necessary for estimation of measures applied in tuberculosis; only when careful control is kept afterward of all the tuberculous given sanatorium or other treatment will the question be finally settled. The first requisite, however, is to exclude all persons from the statistics who are not actually tuberculous, and he emphasizes the difficulty of differentiating tuberculosis by clinical examination alone. Especially a tuberculous focus in a bone or joint requires other evidence than the x-ray findings before its tuberculous nature can be accepted beyond question. He insists on the importance of bacteriologic examination of the pus from an abscess of unknown origin the moment the pus is obtained for the first time; after a fistula has developed the findings are much less instructive.

His experience with the skin tuberculin reaction (Pirquet) in children has confirmed its reliability for children; with adults the negative outcome of the test in some cases is often disconcerting. With a tuberculous focus in bone or joints, radical removal when practicable saves the organism all the work of disintegrating and absorbing the morbid products. The subsidence under radiotherapy of a tuberculous focus may flood the system with tuberculous products, as from an extremely severe course of tuberculin treatment and thus do direct harm. Even after excision, a course of mild tuberculin treatment may be indicated and may bring the desired complete turn for the better; the dosage, he remarks, is the weak point to date of tuberculin treatment.

König has not had very extensive experience with roentgenotherapy of surgical tuberculosis although Iselin's experience since 1908 in 800 cases of surgical tuberculosis encouraged him to try it occasionally. Iselin has learned to prevent x-ray burns, but the reports of unexpected by-effects in some cases, compelling amputation later of the limb, have caused others to pause before entering on this course of treatment which has to be continued over long periods to be effectual. König has tried to obtain equally good results by artificial heliotherapy at his clinic, as comparatively few children can be given the benefit of a year or so in the mountain sanatoriums with exposure to the mountain sunshine. König has realized somewhat similar effects with the ultraviolet rays generated by the mercury quartz lamp. Since last June he has been using it constantly both for local and general exposures with a current of 220 volts and the lamp 30 or 40 cm. distant for local exposures, and from 80 to 100 cm. distant for general exposures. He uses the lamp thus for one or two hours a day. Some of the patients have had sixty single sittings. No injurious effects have ever been noted. The eyes and sensitive regions of the skin are protected with a black cloth. This method has been applied in fifty cases of surgical tuberculosis. At first there is a powerful local reaction, sometimes with blistering, like a "glacier burn." Then the swollen lymph-nodes begin to decrease in size, fistulas to secrete more copiously and small ones begin to heal. Still more effectual are the general exposures. Six or more children are exposed naked to the rays all at once for a period up to two hours in this artificial mountain sunshine. The improvement in the general health was distinct in every case and sometimes surprising. One girl who had been twice operated on for tuberculous hip-joint disease, with numerous fistulas, and great edema of the vulva and legs regained her health completely under the quartz lamp exposures. The health of all the children improved, they gained in weight, lymph-nodes swelled and then subsided again, testifying to the revolution induced in the organism by the exposures. König's special aim in his article is to convince the general practitioner of the possibility of applying effectual treatment for surgical tuberculosis anywhere, without the necessity for long trips and sojourns away from home.

104. **Abnormally High Blood-Pressure.**—John declares that the measurement of the blood-pressure should be part of every routine examination. In this way we will be able to detect a tendency to an abnormally high blood-pressure before it begins to induce symptoms, and by taking the appropriate steps be able to keep the patients well within the danger line. Otherwise, emotional or physical stress is liable to bring on serious accidents. Symptoms of insufficiency on the part of the heart with an abnormally high blood-pressure are of much more momentous import than the same symptoms in the course of other heart affections. Only when the first symptoms are heeded and appropriate measures instituted, is it possible to keep in good condition our patients with unduly high blood-pressure and cardiac insufficiency. The first symptoms are mainly subjective, merely a little shortness of breath, general depression, in connection possibly with a family tendency to apoplexy or heart disease. When he encounters these symptoms with an abnormally high blood-pressure he keeps the patient in bed for two days restricting him to milk, given according to Karell, supplemented by a little of some digitalis preparation four times a day, keeping up the digitalis for two weeks or still longer. In case of emergency, he gives the drug by intravenous injection. Venesection also aids in lightening the task of the heart, and a tendency to obesity must be corrected. Occasional repetition of the milk course of dieting according to Karell is an excellent means to this end. Tobacco must be dropped entirely on account of the action of nicotin on the vessels which he has recently demonstrated anew in a long series of tests, keeping the blood-pressure under control. (The Karell method was described in The Journal, Feb. 17, 1912, p. 524.)

105. **Improved Technic for Rapid Diagnostic Inoculation of Guinea-Pigs.**—Hagemann has been making extensive comparative tests of various current means for diagnosing tuberculosis and found that none could be relied on implicitly. Römer called attention recently to the peculiar and characteristic inflammatory reaction in the skin which occurs when a tuberculous animal, and especially a tuberculous guinea-pig, is injected into the skin with a given small amount of tuberculin. Hagemann has found that this reaction occurs regularly when an effusion or other organic fluid from a human being infected with tuberculosis is injected into the skin of the tuberculous guinea-pig. About 0.1 c.c. of the suspected fluid is injected into the skin of the animal and the diagnostic reaction is evident in from eighteen to twenty-four hours. He applied this test 170 times with material from forty-eight patients including thirty-three with certain and three with dubious tuberculosis and twelve certainly free from tuberculous lesions.

In none of the non-tuberculous cases could a positive response be elicited while the findings were constantly positive in the tuberculosis cases with two exceptions traced to defective technic. In four cases the characteristic reaction was obtained when all other diagnostic measures failed to elicit a response. The findings were constantly positive with the serous effusion from a tuberculous joint effusion; every one knows the difficulty of a correct diagnosis in these joint cases as the lesion may be of traumatic origin, rheumatic, chronic inflammatory, syphilitic or neuropathic, and the course of the affection, the onset, the x-ray findings, etc., may all prove misleading and no tubercle bacilli can be discovered in the effusion. But if it is of tuberculous origin it contains products of the bacilli and these will elicit the specific reaction if injected into the skin of a tuberculous guinea-pig. It is in this class of cases that the method is most instructive. Hagemann has applied the test in twenty-three cases of knee effusions and none of the non-tuberculous cases gave a positive response. One of the eight certainly tuberculous cases gave a negative response. The reaction is thus conclusive only when it is positive, and if the guinea-pigs are in far advanced tuberculosis they are not capable of the reaction. He tests the guinea-pig first with 0.2 c.c. of tuberculin in 0.1 c.c. salt solution. He infects the animals by an intraperitoneal injection of 1/10 or 2/10 mg. of tubercle bacilli. They are ready for the test in from four to six weeks. The typical reaction to the intracutaneous injection of the suspected fluid is a swelling developing in eighteen or twenty-four hours and about the size of a silver quarter or more. In the center is a purplish discoloration surrounded by a china-white ring and this in turn by an area of inflammation. With a less pronounced reaction there may be no central discoloration, or there may be an atypical mild response which leaves a nodule in the skin perceptible for ten days. The inflammation which follows injection of pus cocci differs so completely that it cannot be confused with the typical response to injection of tuberculous material. Hagemann undertook this work with the aid of a special appropriation for scientific research, and thinks that the above simple technic will be found highly instructive and reliable while it usually permits exact differentiation in less than twenty-four hours.

106. **Prophylaxis of Diphtheria.**—Jochmann states that at the Virchow hospital it was found possible to keep nearly all the diphtheria patients until no further diphtheria bacilli could be found in their throats on three reexaminations. Most of them were free from the bacilli in two or three weeks and 75 per cent. by the third or fourth week. This proved a great gain in prophylaxis, and a further advance was the use in prevention of diphtheria antitoxin obtained from cattle. No serious by-effects were noticed in the seventy-nine persons thus given prophylactic injections, including thirty-two young infants, seventeen in the second year, twenty-three older children and seven adults. None of those injected developed diphtheria later, and he thinks that this cattle antitoxin will solve the question of dodging anaphylaxis.

107. **Autoserotherapy and Autohemotherapy.**—Spiethoff reports striking success in a number of cases of various infectious affections, prostatitis, eczema, suppurating inguinal lymph-nodes, etc., which he treated by reinjecting some of the patient's own serum or blood. He draws the blood directly through a wide cannula into the syringe and then introduces a narrow cannula inside the first one, and reinjects the blood or serum at once through this second cannula. He has applied the measure in some cases five days in succession, reinjecting each time 20 c.c. of the patient's own blood. The reaction seems to be the same to the blood as to the serum; local reactions develop and changes in the white corpuscles are noted.

110. **Rheumatic Polyneuritis.**—Schulhoff states that this affection is a well defined clinical entity; it may be the work of the bacilli or the result of toxemia or exposure to excessive heat or cold. The symptoms are sensory, motor and trophic, the first named being the most pronounced and often leading to the diagnosis of neuralgia or gout. The pains commence insidiously, at first merely a sensation of tension in a limb or over several nerve areas. At first there are intervals free from discomfort or pain but the pains gradually become more continuous and increase in severity on changes in the weather or with fatigue. The nerves are not tender

except at the emerging points of the main trunks. The pains are described as rheumatic or sharp, almost lancinating, and the muscles may be felt contracted in the area. There are also paresthesias, a smarting of certain areas of the skin, especially in the domain of the ulnar nerve, over the sacrum, on the front of the thigh or on the fingers. There are liable also to be sensations of cold, formication, pain on exposure to cold, and sometimes extreme hyperesthesia, so that any touch, even the weight of the lightest bed clothes, induces unbearable pain. The motor disturbances are a slight or severe paresis in the domain of the nerve involved, when the affection has lasted a long time. At first the patients complain merely of weakness and that they tire readily. There may be isolated spasmodic contraction in the muscles innervated by the nerves suffering from the neuritis; if the trouble is of long standing there may be atrophy. In case it affects the cutaneous nerves alone there may be a tendency to gooseflesh, with hyperesthesia and much itching. Treatment with thermal baths, Zander exercises and galvanic electricity is often promptly and surprisingly effectual.

111. **To Fight Sleeplessness.**—Moszeik describes a method with which, he says, one is almost certain to woo slumber with success. On going to bed you assume a comfortable attitude in which every muscle is relaxed but not the attitude in which you are accustomed to go to sleep, but something resembling it. Every movement, coughing, yawning, are strictly repressed, especially the desire to turn over. The same attitude is maintained without change, constantly resisting the longing to move or turn over. As a rule by the end of fifteen or twenty minutes of this persistent maintenance of the same attitude, you find yourself growing very drowsy and then, just as the desire to turn over becomes absolutely uncontrollable, you turn with the least possible effort and assume the position in which you habitually go to sleep, and natural sleep follows at once. This method seldom fails, he states, and should be given a thorough trial, at least, before resorting to a drug to bring sleep.

Münchener medizinische Wochenschrift

June 10, LX, No. 23, pp. 1241-1304

113 *Face Presentation. (Ein Handgriff zur Umwandlung der Gesichtslage.) W. Zangemeister.
114 Determination of Cholesterin in Blood and Organs. (Ueber kolorimetrische Bestimmungsmethoden: Die Bestimmung des Gesamtcholesterins im Blut und in Organen.) W. Autenrieth and A. Funk.
115 *Fistula and Perforation at Base of Skull. (Ueber Mittelohrfisteln und Perforation an der Schädelbasis, Zysten und abnorme Knochenbildungen daselbst.) B. Riedel.
116 *Gall-Bladder Symptoms in Typhoid. (Ueber pseudo-cholezystitische Symptome bei Typhus.) H. Bennecke.
117 *Treatment of Threatened Gangrene of the Fingers. (Zur Therapie der Raynaudschen Krankheit.) R. Schreiber.
118 *Spiral Incision in Treatment of Varices. H. T. Geinitz.
119 Serodiagnosis of Pregnancy. (Verwendbarkeit der Abderhaldenschen Reaktionen bei der Serumdiagnose der Schwangerschaft.) F. Maccabruni.
120 Camphorated Oil in Peritonitis. (Kampferöl bei Peritonitis und Douglasabszess.) A. Blecher.
121 Quack Advertisements. (Grenzen der Reklame.) Lingel.

113. **Management of Face Presentation.**—Zangemeister gives an illustration which shows at a glance the simple means with which he transforms a face into a head presentation. The gloved hand on the side toward which the face is turned is introduced with the fingers extended; the thumb is run into the mouth and the chin is presssed upward with the thumb while the tips of the fingers on the chest press the chest backward. At the same time the other hand on the abdomen outside presses the breech over to the front, toward the child's abdomen. The hand inside the uterus is of course on the side on which the uterus bulges least, as the top of the head and the breech protrude on the other side. Another advantage of the procedure is that it can be done by one person, using both hands. He has applied it in five cases and in three the presentation was changed without the slightest difficulty; in the others a meningocele or other deformity interfered. In conclusion he discusses the various indications for changing the presentation, emphasizing the contra-indications, namely, danger of impending rupture of the uterus, placenta praevia, true conjugate less than 7.5 cm., and all conditions requiring immediate artificial delivery.

115. **Malformations at Base of Skull Responsible for Spreading of Ear Disease.**—Riedel gives a number of examples to show the clinical importance of unsuspected openings and other malformations at the base of the skull as responsible for fistulas and cysts in this region. One woman of 49 had suffered for ten years from occasional pains behind the left ear and back of the tonsil, the attacks terminating with the discharge of pus into the mouth. The intervals gradually became shorter until finally the discharge was observed every three or four days but no source for it could be discovered. An operation revealed several malformations, shown in an illustration, but no recess containing pus was detected. A bean-shaped piece of cartilage was found attached to the musculature of the jaw and was removed and the patient was cured of all disturbances.

116. **Pseudocholecystitis in Typhoid.**—Bennecke reports seven cases of typhoid in which pain developed in the gall-bladder region, but there was no jaundice and no radiation to the back. The course of the cases apparently excluded actual cholecystitis, and the trouble was evidently due to acute hepatitis, changes in the muscles from hemorrhage or degeneration, or pleurisy; in four of the cases there was a pleuritic effusion on that side.

117. **Treatment of Raynaud's Disease.**—Schreiber applied Noesske's method of slitting the tip of the finger in a severe case of Raynaud's disease, but found that the apparent "cure" was only transient; after three months the fingers were in as bad a condition as before. He then treated the woman with local hot-air douche massage—not the superheated air box for fear of burning the tissues. The effect was surprisingly good, as also in a second similar case. The Noesske method should be reserved for crushing injuries of the hands or felon; his experience shows that the effect is liable to be only transient in chronic disturbance in the circulation.

118. **Spiral Incision in Treatment of Varices on the Legs.**—Rindfleisch's method, a spiral incision down to the fascia, carried around the leg, was applied by Geinitz in six cases of chronic varicose ulcers two years ago. The immediate results were not very encouraging. Edema developed in all but one case and there was a little pain on using the leg at first, healing required several weeks, and the scar left was disfiguring. Recent reexamination of the patients, however, has convinced him of the value of the method. The scars are now level with the skin; there is no tendency to edema, and the old varicose trouble is entirely cured. In cases of severe varicose ulcers and diffuse enlargement of the veins, he thinks this method has proved its efficacy.

Wiener klinische Wochenschrift, Vienna

June 12, XXVI, No. 24, pp. 961-1008

122 Indications for Artificial Pneumothorax with Pulmonary Tuberculosis. H. Schur and S. Plaschkes.
123 The Lipoid Content of the Blood, especially in Tuberculosis. M. v. Eisler and M. Laub.
124 Connection Between Asthma and Tuberculosis, and Tuberculin Treatment of Asthma. O. Frankfurter.
125 Diagnostic Skin Reaction in Tertiary Syphilis. II. (Ueber eine klinisch verwendbare Kutanreaktion auf tertiäre Syphilis.) E. Klausner.
126 The Refractometer in Physiologic Chemistry. S. Serkowski and W. Kraszewski.
127 Affinity of Organs for Salvarsan. II. (Zur Organotropie der Salvarsanpräparate.) K. Ullmann. *Commenced in No. 23.*

June 19, No. 25, pp. 1009-1052

128 Mechanism of Serodiagnosis of Cancer. (Herkunft der die Karzinomzellen beeinflussenden Serumbestandteile.) E. Freund and G. Kaminer.
129 *Etiology of Ozena. (Beziehung des Bacillus Perez zur genuinen Stinknase.) G. Hofer.
130 *Psychotherapy in General Practice. R. Hatschek.
131 *Attacks of Pain in the Hip Joint of Children. (Die koxalgische Attacke im Kindesalter.) F. R. v. Friedlander.
132 Chemical Constitution of the Eosinophil Granules. H. Müller.
133 *Dietetic Influencing of Size and Weight of Child at Birth. (Das Gewicht des Neugeborenen und die Ernährung der Mutter.) J. Bondi.

129. **Perez Bacillus Responsible for Ozena.**—Hofer states that more than ten years have elapsed since Perez in Buenos Aires called attention to a cocco-bacillus which he had cultivated from the nasal secretions of ozena patients. It takes the usual anilin stains but not the Gram, does not liquefy gelatin nor coagulate milk, but induces ammoniacal fermentation in urine and emits the typical fetid odor of ozena. Perez is now ambassador from Argentina to Vienna, and has applied to the Vienna experts to test the claims of this bacillus. Hofer reports the results of extensive research at two of the scientific institutes, all of which has amply confirmed Perez' statements. It seems to be established beyond question that this bacillus can be found in the majority of cases of ozena, and induces in animals a nasal affection apparently identical with human ozena. He regards it as a great advance in our knowledge of ozena as bacteriologic examination will permit the diagnosis in the early stages and possibly lead to effectual prophylaxis and vaccine therapy. (See Vienna Letter, p. 209.)

130. **Psychotherapy.**—Hatschek discusses the various points useful to bear in mind in ordinary psychotherapy and then passes judgment on Freud's methods of psychanalysis which, he thinks, have little scientific basis. He also mentions a few cases in which the application of Freud's method did great harm. In one case an elderly neurasthenic had his condition materially aggravated by self reproaches on account of masturbation in youth. In another case the exploration according to Freud of ideas of incest nearly led to suicide. He adds that the Freud method is undergoing great changes nowadays and something practicable and useful may develop from it, not limiting the motives to sexual impulses. Aside from the Freud system, Hatschek declares that systematic psychotherapy, built up on the principles of Dubois, is extremely important, ranking in neurology only after operative and antisyphilitic measures, and surpassing both by the extent in which it can be applied. It requires great perseverance, much patience and a special sympathy on the part of the physician and a certain degree of optimism. He adds that the world's progress can be credited to the optimists. In the same way in medicine, and here perhaps especially in the field of neuroses, it is particularly the natural optimists among physicians who benefit their patients most.

131. **Pain in the Hip-Joint in Children.**—Friedlander calls attention to attacks of coxalgia in children, one type of which is distinguished by transient spastic fixation of the joint, paroxysms of neuralgia in the sciatic and crural nerve and the abnormally high position of the trochanters on both sides. He explains the condition as the juvenile prelude to senile hip-joint disease; the pain is constant and of great diagnostic importance as it distinguishes the trouble from tuberculous and metastatic coxitis; at least he has never observed this constant neuralgia in any of his cases of tuberculous and metastic hip-joint disease. There is still another form of pain in the hip-joint; it affects mostly children about 6 years old and commences suddenly with severe pains in the hip-joint and inside of the thigh, occasionally with pain in the knee. There is no atrophy of muscle but sometimes there is a history of mild trauma or recurring tonsillitis. After a few days the storm has entirely passed over but the attacks may return and may affect both hip-joints alternately. He thinks that this ephemeral coxitis is a manifestation of the mildest form of osteomyelitis, as reexamination of the children later shows that the thigh on this side is longer than the other. There seems to be something stimulating it to exaggerated growth. In one case the limb became 3 cm. longer in the course of four years; in another there was a difference of 0.5 cm. by the end of five weeks. He has encountered the same trouble in other joints.

Pain in the hip-joint is always suspicious of tuberculosis when there is considerable atrophy of muscles, undue length or shortening of the leg, enlargement of the joint and lymph-nodes around, and a change in the child's physical and psychic bearing has been noted for a little while. On the other hand when there is no atrophy of muscle but the trochanters are abnormally high and the sciatic and crural nerves are painful while the joint itself is not tender and there is contracture of the flexor and abducting muscles, with concentric limitation of the excursions, there is every reason to assume some irritation of the joint from static conditions. If, however, the hip-joint becomes contracted with abduction or slight adduction, and there is pain; if the joint is slightly swollen and tender and its movability somewhat disturbed, but no involvement of lymph-nodes or atrophy of muscle, we can explain the trouble as an ephemeral coxitis. The probability of this is enhanced when there has been preceding tonsillitis, and when the attack speedily passes over. The assumption is confirmed later by the discovery that the leg is longer than its mate.

133. **The Weight of the Fetus and the Nourishment of the Mother.**—Bondi has been conducting extensive research along this line, both clinical and in study of animals, and he has become convinced that the fetus draws from the mother what it needs for its growth regardless of the condition of nourishment of the mother. It behaves as independently in this respect as a malignant tumor, just as a cancer develops without regard to the condition of nourishment of the individual. He believes that the same conditions prevail in respect to lactation. Fat, well nourished mothers are often poor milkers, while thin, badly nourished women often have plenty of good milk. After excluding the condition of nourishment of the mother as a factor for the development of the fetus, he discusses the three influences which do affect the size of the child at birth: (1) heredity; (2) older women generally have larger children; (3) the influence of the glands with an internal secretion both in mother and fetus. His practical conclusions are that it is impossible to influence the size of the child by dieting the mother more than to keep her in the best normal condition of health.

Zeitschrift für Kinderheilkunde, Berlin

VIII, No. 1, pp. 1-110. Last indexed July 12, p. 158

134 Dietetic Treatment of Eczema in Children. H. Finkelstein.

135 Test for Human Milk. (Neue Methode zur Unterscheidung von Frauenmilch und Kuhmilch, zugleich ein Beitrag zum Studium des lipolytischen Milchferments.) H. Davidsohn.

136 The Phosphates in the Urine of Bottle-Fed Infants. G. Kaminer and E. Mayerhofer.

137 Fluctuations in Albumin Content and Electric Conductibility of Infants' Blood. O. Hagner.

138 Agglutination of Colon Bacilli Has No Diagnostic Significance in Infant Pathology. H. Zeiss.

139 Post-diphtheric Hemiplegia. W. H. Leede.

Zentralblatt für Chirurgie, Leipsic

June 21, XL, No. 25, pp. 993-1032

140 Technic for Operations on Wrist and Palm. (Der ulnare Längsschnitt, eine Schnittführung für Operationen im Bereiche der Volarfläche des Handgelenks und der Hohlhand.) G. v. Saar and R. Schwamberger.

141 Technic for Immobilization of Fractured Ankle. (Behandlung der Frakturen des Unterschenkels, namentlich der typischen Knöchelbrüche mit dem Filzschuh und dessen Kombination mit dem Fränkel'schen Geh-Gipsverband.) M. Többen.

142 Technic for Ample Access to Hypophysis Cerebri. W. N. Nowikoff.

Zentralblatt für Gynäkologie, Leipsic

June 21, XXXVII, No. 25, pp. 917-956

143 *Puncture of Fontanel for Subdural Hematoma from Birth Traumatism. (Die diagnostische und therapeutische Fontanellaspiration des subduralen Geburtshämatoms der Neugeborenen.) K. Henschen.

144 Sarcoma in the Broad Ligament. (Fibrosarcoma ligam. lati.) J. Jacub.

145 Serodiagnosis of Pregnancy. (Biologische Diagnostik der Schwangerschaft nach Abderhalden.) O. Parsamow.

146 Technic for Abcominal Incision. (Längsschnitt oder Querschnitt?) H. Hellendall.

143. **Intracranial Hemorrhage from Birth Traumatism.**—Henschen expatiates on the importance of exact knowledge of the site of the effusion of blood within the cranium, as prompt aspiration of the blood may ward off further injury. The post-mortem findings are misleading as the primary circum-

scribed accumulation of blood spreads throughout the tissues after death. In order to study conditions better, after death from supposed intracranial birth hemorrhage the cadaver should be frozen at once and frozen sections of the skull examined. Physicians should learn to recognize the signs of the injury while the effusion is still circumscribed. If we wait until signs of manifest local or general pressure on the brain have developed in pronounced form, the child is already doomed. An early exploratory puncture of a fontanel may not only reveal the site of the hemorrhage but the child may be saved by this simple measure. Lumbar puncture may give negative findings as no blood may have entered the spinal canal, or injury of the spinal canal may yield blood when there is no intracranial hemorrhage. Puncture of a fontanel is a very simple procedure, he declares, and when properly done seems to be quite harmless, while the child's fate may be sealed by the havoc wrought by the extravasated blood even in less than an hour. Puncture of the anterior or posterior fontanel may reveal a hematoma in the frontal, parietal or occipital subdural space while lumbar puncture or, in dubious cases, puncture between the second and third cervical vertebrae may reveal the dangerous *peribulbar hematomas of the cerebellar region.* General and systematic application of these comparatively harmless diagnostic measures would represent a great advance, he reiterates, in the treatment of the fetal traumatisms of birth.

Another advance, he adds, would be to discard the method of swinging the child, as this invites intracranial hemorrhage and aggravates it if already present. *He suggests as a substitute* for Schultze swinging, rhythmic over-pressure artificial respiration, or mechanical artificial respiration in a small negative-pressure cabinet constructed especially for resuscitation of the newly-born. When the subdural hematoma is diagnosed it is a simple matter to aspirate out the blood-stained fluid through the needle in the fontanel. He advises always to supplement this by aspiration of fluid by lumbar puncture as an excess of cerebrospinal fluid is generally secreted in consequence of the irritation from the hematoma, and withdrawal of some of it from below will further aid in reducing the pressure on the brain. If the fluid in the hematoma has clotted, a larger opening may have to be made to clear out the clots maintaining the irritation. The hemorrhage generally stops of itself unless some large sinus is torn, the clots tamponing the *bleeding point;* the blood of the newly-born is exceptionally rich in fibrin and clots rapidly. Henschen reviews the work of Cushing and others in the line of operative treatment, stating that seven recovered of the sixteen infants treated in this way; that is, nearly 44 per cent. of the otherwise doomed children were saved.

C. C. Simons incised the anterior fontanel along the corner of the parietal bone and after removing the hematoma sutured the incision at once and both of the *infants* treated in this way recovered. A third child was operated on by this technic by Henschen himself. The child was born in frontal presentation and except for a swelling on the brow seemed normal for three hours; then there were signs of collapse with spasmodic contraction of both arms and exaggerated reflexes. Three hours later puncture of the *fontanel* disclosed both fluid and coagulated blood, but a clotted hematoma on the other side was overlooked. From this case we learn several *important* lessons, in particular that the subdural hematoma of *the newly* born is liable to reaccumulate when the tamponing clot is removed and the dura is replaced without draining. This occurs thus in the newly born the same as in adults, and if the hemorrhage is *not definitely* arrested by the intervention, the cavity should be drained. In his case the signs of pressure on the brain from the right hematoma subsided completely after its removal but they returned again as the effusion recurred. A second hematoma on the left side escaped detection and was the cause of the eventual fatal outcome. The case shows that coagulated blood may escape detection by the diagnostic exploratory puncture, and it teaches further that with bilateral spasmodic contraction the skull should be opened on both sides, even if the exploratory punctures give negative findings. On account of the early clotting, the needle should be of a large size and used with a cannula, the opening turned downward. The cannula *should* be *introduced* parallel to the plane of the bone to avoid injury of vessels. He commends as peculiarly simple and effectual the technic he followed in his case: the triangle of bone formed by the frontal corner of the parietal bone was turned back with the soft parts above, and after removal of the clots the dura was replaced without suturing, the flap replaced and the soft parts sutured.

Zentralblatt für innere Medizin, Leipsic

June 21, XXXIV, No. 25, pp. 633-656

147 *Edema Induced by Large Dose of Alkali. (Sodaödeme.) M. J. Breitmann.
148 The Duodenal Pump in Diagnosis of Duodenal Hemorrhage. Sklodowski.

147. **Soda Dropsy.**—Breitmann noticed that edema developed suddenly in a diabetic boy given large doses of an alkali to correct his acidosis. *The elimination of sodium chlorid* in *this and a number of similar cases* was apparently normal, *but the children increased remarkably* in weight and became almost transparent from the retained fluids. The course of the cases showed that this edema was an unfavorable sign. He had similar experiences with this edema and pseudo-ascites following administration of an alkali *in cases of suppurative cystitis, chronic intestinal trouble, in lordotic albuminuria,* in gout and with septic processes. As it is frequently important to give an alkali, its dropsy-producing action must be counteracted by combining it with some other drug to keep the patient in the pre-edema stage. His results have been encouraging with sodium acetate or injection of pilocarpin. Belladonna preparations are contra-indicated as they *reduce* glandular secretion. *He* warns *particularly against permitting* this soda dropsy in patients with acidosis, the exudative diathesis or the lymphatic constitution. It may occur with intact kidneys, and it is a question whether the retention of fluids is induced by the alkali itself or indirectly by its combination in the form of sodium chlorid.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 15, XXXIV, No. 71, pp. 743-758

149 The Blood in Pellagra. (Ricerche batteriologiche sul sangue di pellagrosi comuni.) P. Perucci.

June 19, No. 73, pp. 767-774

150 Ileus and Volvulus from Presence of Ascarides; Two Cases; Boys 7 and 9. E. Cartolari.

Policlinico, Rome

June 15, XX, No. 24, pp. 841-876

151 Connection of Staphylococcus with Rat Cancer. (Sui rapporti tra stafilococco aureo e tumore maligno.) P. Marlconda.
152 Extra-Uterine Complicating Normal Pregnancy. P. Fabris.

Riforma Medica, Naples

June 7, XXIX, No. 23, pp. 617-644

153 The Inclusions in the Polymorphonuclear Leukocytes with Surgical Lesions. (I corpi inclusi nei leucociti polimorfonucleati durante il corso delle affezioni chirurgiche.) A. Nacciarone. Commenced in No. 22.
154 Serotherapy of Tuberculosis by the Rectum. (Sull'impiego di siero batteriolitico antitubercolare per via rettale.) G. Romanelli. Commenced in No. 22.
155 Syphilitic Changes in the Monkey Aorta. (Alterazioni aortiche da sifilide nelle scimmie.) P. Boveri.
156 The Diazo Reaction in Surgical Tuberculosis. B. Rosati.

June 14, No. 24, pp. 645-672

157 Experimental Research on the Hypophysis. (Nuovo metodo operativo per lo studio sperimentale della ipofisi *cerebrale.*) U. Scinicariello.
158 Serodiagnosis of Syphilis. (Ricerche sulla reazione di Hermann-Perutz.) M. Giorgis. Commenced in No. 23.
159 Case of Thrombosis of Cerebellar Arteries. (La trombosi delle arterie bulbari.) A. Salmon.

Ugeskrift for Læger, Copenhagen

May 29, LXXV, No. 22, pp. 929-960

160 Effectual *Treatment* of Total Paresis. E. Myrop.

June 5, No. 23, pp. 961-1012

161 Prevalence of Syphilis at Copenhagen. S. Lomholt.

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CLINICAL EFFECTS OF "NATURAL" AND "SYNTHETIC" SODIUM SALICYLATE

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A COOPERATIVE INVESTIGATION

It has been claimed that the sodium salicylate prepared from natural oils is superior as a therapeutic agent to the sodium salicylate prepared by synthetic methods. If this claim be justified, then the natural form of the drug should be prescribed by physicians; but if the claim be unsubstantiated, then the additional expense of the natural product is unnecessary and the synthetic drug is to be preferred. The Council on Pharmacy and Chemistry of the American Medical Association has undertaken to investigate various aspects of this question, and papers dealing with the literature,[1] the effect of the drug on animals[2] and the chemical purity of commercial sodium salicylate[3] have already appeared. In determining the relative therapeutic value of the two forms of sodium salicylate, however, clinical evidence of the proper sort is of paramount importance. The efficacy of the drug in relieving pain, and especially its value in acute rheumatic fever, can be determined only by studies on patients; while the toxic effects of the drug on animals cannot be transferred unreservedly to man, especially when we are dealing with patients already subjected to the pathologic changes of acute rheumatic fever.

It is not easy, however, to obtain reliable clinical evidence on such a subject. The personal equations of different observers, the tendency to bias, differences in the modes of administration, in the doses employed, and in the cases selected for treatment, all tend to obscure the significance of reported results. In order to obtain trustworthy data, it is necessary that a considerable number of observations on patients should be made under conditions which eliminate personal bias and reduce to a minimum the errors inherent in statistics.

METHOD OF INVESTIGATION

In order to obtain data as free as possible from error, the Council requested the cooperation of a number of clinicians of recognized standing. They were asked to use and to note the effects of test-powders of sodium salicylate without knowing the sources, natural or synthetic, of the individual powders. Should there be a marked difference in the two forms of the drug, it might be expected that an expert clinician could detect which form he was using. If differences were present, but less marked, a study of the collected reports should show these differences. The following letter was therefore addressed to the clinical consultants of the Council on Pharmacy and Chemistry, to all members of the Association of American Physicians, and to all members of the American Therapeutic Society:

> July 20, 1911.
>
> *Dear Doctor:*—The Council on Pharmacy and Chemistry has undertaken to investigate the question whether there are any differences in the actions of "artificial" and "natural" sodium salicylates and would appreciate your cooperation. In order to place the evidence above any possibility of prejudice or bias, it is planned to issue to a number of clinicians boxes of ten powders, each powder of 10 or 15 or 20 grains (as preferred) of sodium salicylate. Half of these boxes will be filled with a good quality of synthetic sodium salicylate (Merck's), the other half *with sodium salicylate* which is being specially prepared by Professor Lloyd from oil of birch. These boxes will bear only a serial number and the clinician will be asked to treat each patient from one box *only*, and to report whether his observations permit him to arrange the results under two groups, as also the criteria and data which he used in making the classification. A comparison of his grouping with the list actually supplied to him should then show whether there is a real difference between the two products.
>
> The following outline used by a collaborator in a somewhat similar investigation may serve as an illustration but it is not intended to restrict the observers in any way:
>
> "The hospital was supplied with boxes containing ten powders each of 20 grains of sodium salicylate (200 grains) in each box. The residents were directed to administer to the rheumatic patients one powder, in water, every hour, until toxic; using only the contents of *one* package on each patient. The unused powders were to be returned for control. The record was to state:
>
> "1. The number of the sample.
> "2. The age and sex of the patient—record number.
> "3. The total dose taken.
> "4. The effects noted: (*a*) relief of pain; (*b*) antipyresis; (*c*) diaphoresis; (*d*) ear-effects; (*e*) gastric effects; (*f*) delirium; (*g*) albuminuria; (*h*) acetonuria; (*i*) other data."
>
> Please note on the enclosed card whether we can count on your cooperation and if so when you will be ready to start and whether you wish the powders to be of 10, 15 or 20 grains. The Council would also be grateful for any suggestions.

Of the physicians addressed, eighty-two expressed a willingness to cooperate in the investigation. To each of these were sent ten boxes each containing ten powders of the size which the physician wished to administer. Each box bore a number whereby the source of the salicylate could be recognized when the report was received. In group A, Boxes 1, 2, 4, 7 and 10 contained the synthetic salt, and Boxes 3, 5, 6, 8 and 9 the natural salt. In group B, Boxes 2, 3, 5, 6 and 8 contained the synthetic and 1, 4, 7, 9 and 10 the natural salt. The following letter accompanied the powders:

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[1] Eggleston, C.: The Relative Value of the "Natural" and the Synthetic Salicylate: A Study of the Literature, The Journal A. M. A., Dec. 7, 1912, p. 2037.

[2] Waddell, J. A.: A Comparative Investigation of the Effects and Toxicity of Sodium Salicylates of Natural and Synthetic Origin, Arch. Int. Med., December, 1911, p. 784.

[3] Hilpert, W. S.: The Purity of Commercial Sodium Salicylate, The Journal A. M. A. April 12, 1913, p. 1137.

> August, 1911.
>
> *Dear Doctor:*—As you have consented to cooperate with us in the sodium salicylate investigation, we are sending you ten boxes of sodium salicylate powders as requested for clinical tests, to determine whether there is any difference in the effects (desired or undesired) of the "natural" and "synthetic" substances. Each box bears a serial number and contains either "natural" sodium salicylate or "synthetic" sodium salicylate, the origin of which is recorded in this office. Please treat each patient from one box only and preserve a record of the phenomena. Preserve any unused powders for return to the laboratory, for control. The administration should be restricted to patients with typical acute articular rheumatism; or at least, other cases should be listed separately.
>
> At the end of the investigation, please report your results and state whether you can attempt to identify the origin of the powders by your results, and what criteria and data you have used in this classification.
>
> The following outline used by a collaborator in a somewhat similar investigation may serve as an illustration but it is not intended to restrict the observers in any way:
>
> (For outline, see previous letter.)

CLINICAL REPORTS

I was asked by Dr. Torald Sollmann, chairman of the Council's Committee on Therapeutic Research, to review and analyze the clinical reports that had been received. For various reasons a considerable number of those to whom powders had been sent were unable to furnish data. The following review is based on reports received from twenty-seven clinical investigators, embodying approximately 230 separate observations on the effect of the salicylate powders used. As might be expected, the reports varied widely in the completeness of the data furnished, in the modes of administration, and in the diseases treated. A few observations had to be discarded because the investigators had not noted the numbers on the boxes from which the powders had been taken. It was necessary to summarize each report before attempting a comprehensive analysis. These summaries will be published as an appendix in the reprints of this paper.

On attempting to review these reports, one is immediately confronted by the diverse modes of administration and by the different diseases treated. It is manifestly impossible to compare the results of those who gave 200 grains of sodium salicylate in ten hours with the results of those who gave 45 grains a day; or to compare the effects when only frank cases of rheumatic fever were treated with the effects when various other joints, or muscular or nerve pains were attacked. For this reason the reports are not readily comparable, one with the other. Nevertheless, since each observer received an equal number of natural and synthetic powders and used these indiscriminately, the results form a reliable basis of comparison between the two sets of powders, for the variations in administration, type of case, etc., tend to distribute themselves equally between the two classes of salts. Indeed, these variations are in a certain sense advantageous, for they permit some comparison of the effect of the two sets of salts under different conditions.

In Table 1 I have summarized the principal results of the fifteen more complete reports. The relief of pain and fall of temperature were tabulated only for what seemed to be cases of true rheumatic fever, while the diaphoresis, gastric disturbances and ear-symptoms were tabulated for each set of powders administered. Occasionally a single patient received two or more sets of powders so that the total number of observations exceeded the total number of patients. Under the

TABLE 1.—PRINCIPAL RESULTS OF FIFTEEN REPORTS

Observer	No. of Patients	Administration			Relief of Pain						Fall of Temperature						Diaphoresis						Gastric Disturbance						Ear Symptoms					
		Usual Dose Grains	Usual Interval	Usual Total Amount	Relief		No Relief		Not Noted		Fall		No Fall		Not Noted		Present		Absent		Not Noted		Present		Absent		Not Noted		Present		Absent		Not Noted	
					N*	S*	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S	N	S
Barnes, N. P.	7	10-20	3 a day	...	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	8	12	..	..	1	2	7	10	..	1	..	..	8	11
Coleman, W.	24	20	2 hours	200	10	11	1	2	1	..	6	9	4	1	2	3	4	4	6	8	2	1	2	1	9	11	1	1	..	3	10	9	2	1
Hall, A. J.	7	20	3 hours	200	1	3	..	..	..	..	1	3	..	..	..	..	..	..	..	..	5	5	1	..	4	5	..	..	1	..	4	5	..	..
Hall, J. N.	5	15	1 hour	120	1	3	..	1	..	..	1	2	..	..	..	2	1	2	..	..	..	2	..	..	..	..	1	4	1	4	..	..	..	..
Heyn, L. G.	10	20	1 hour	200	4	3	1	..	..	1	5	3	..	1	..	..	5	5	..	..	..	..	2	1	2	2	1	2	3	4	1	1	1	..
Kollipinski, L.	5	15	3 a day	...	1	2	..	..	..	..	..	..	..	..	1	2	..	..	3	3	..	..	..	..	3	3	..	..	..	..	3	3	..	..
Lucas, W. P.	4	10	4 a day	...	2	4	..	..	1	..	2	..	..	1	1	3	1	1	..	..	3	3	..	..	..	..	4	4	..	..	..	..	4	4
Martin, C. F.	8	15	....	150	4	5	1	..	..	..	5	5	..	..	..	..	4	3	1	2	..	..	..	..	5	5	..	..	1	1	4	4	..	..
Roper, J. C.	10	15	2 hours	150	5	5	..	..	..	..	5	5	..	..	..	..	5	5	..	..	..	..	1	3	4	2	..	..	4	4	1	1	..	..
Rudolf, R. D.	15	20	2 hours	200	3	1	1	..	..	..	..	1	4	..	..	..	7	4	1	3	..	..	6	3	2	4	..	..	6	5	2	2	..	..
Skebelsky, J. W.	2	10	....	100	1	2	1	..	..	..	2	2	..	..	..	..	2	2	..	..	..	..	2	2	..	..	..	..	2	2	..	..	..	..
Taylor, D.	16	20	1 hour	200	9	7	1	..	..	..	6	6	1	..	3	1	5	3	2	2	3	2	2	6	7	..	1	1	6	3	4	2	..	2
Williams, F. H.	6	10	1 hour	100	3	3	..	1	..	..	1	3	2	1	..	..	2	4	1	..	..	..	1	1	2	3	..	..	..	2	3	2	..	..
Withington, C. F.	10	15	....	150	5	4	..	1	..	..	3	2	2	3	..	..	3	1	2	4	..	..	1	2	4	3	..	..	1	0	4	5	..	..
Wilson, J. C.	10	15	....	120	3	3	..	1	2	1	..	..	..	..	5	5	4	5	1	..	..	..	2	1	3	4	..	..	5	4	..	1	..	..
Totals	139	..	....	....	52	57	6	6	4	2	37	41	13	7	12	17	43	39	17	22	21	25	20	20	46	44	15	22	30	33	36	35	15	18
N's* used	..	..	....	....	62	..	..	..	..	..	62	..	..	..	..	..	81	..	..	..	..	..	81	..	..	..	..	..	81	..	..	..	..	..
S's* used	..	..	....	....	..	65	..	..	..	..	..	65	..	..	..	..	..	86	..	..	..	..	..	86	..	..	..	..	..	86	..	..	..	..
Percent.	..	..	....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Positive	..	..	....	....	85	88	..	..	..	..	60	63	..	..	..	..	52	46	..	..	..	..	25	23	..	..	..	..	37	38	..	..	..	..

* N, Natural salicylate: S, Synthetic salicylate. Relief of Pain and Fall of Temperature were tabulated only in what seemed to be cases of acute articular rheumatism. Other symptoms were charted for all powders given.

columns "not noted" were included not only those cases in which the results were not noted, but also those in which the results were indecisive. Of 62 cases of rheumatic fever in which the natural sodium salicylate had been used, the pain was relieved in 52, or 85 per cent., and the fever fell in 37, or 60 per cent. Of 65 cases in which the synthetic sodium salicylate had been used, the pain was relieved in 57, or 88 per cent., and the temperature fell in 41, or 63 per cent. Diaphoresis occurred in 43 of 81 instances when the natural salt was used, or 52 per cent., and in 39 of 86 instances when the synthetic salt had been used, or 46 per cent. Similarly gastric disturbances occurred in 20 of 81 (25 per cent.) observations with the natural salt and in 20 of 86 observations (23 per cent.) with the synthetic salt. Ear symptoms occurred in 37 per cent. of the tests with the natural and in 38 per cent. of the tests with the synthetic salt. These slight differences, which, if anything, favor the use of the synthetic salt, are probably due to the ordinary statistical variations and, with a much larger series of cases, they would probably tend to disappear.

Various cerebral disturbances were occasionally noted. Drowsiness or stupidity was noted in one case in which the natural salt had been given, and in three cases in which the synthetic salt had been given. Slight delirium or confusion was noted in five patients receiving the natural salt and in three patients receiving the synthetic salt. More severe delirium was noted in four patients, two of whom received the natural salt and two the synthetic salt. Of the former, one was attributed to delirium tremens, and the other to cerebral rheumatism. One patient who received the natural salt developed melancholia.

Suppuration of the ear occurred in one patient who had received the natural salt. A rash appeared in one patient who had received the synthetic salt. Albuminuria developed in eight patients after administration of the natural salt and in seven patients after administration of the synthetic salt. Acetone developed or was increased in six patients after taking the natural salt and in four patients after taking the synthetic salt. The total number of urinary examinations reported was relatively small.

Two patients having acute articular rheumatism died during the administration of sodium salicylate. One of these patients received 70 grains of the synthetic salt and the other 60 grains of the synthetic salt. These amounts were small, being less than one-half of the total dosage administered to the majority of patients tabulated. The first of these patients died with manifestations of circulatory insufficiency and dilated heart.

The second showed profuse sweating, epistaxis and wild delirium, dying with cerebral symptoms. In each case the death is to be attributed in the main to the rheumatic infection, which may on the one hand produce a definite form of acute myocarditis with myocardial insufficiency, and on the other hand severe cerebral symptoms, the so-called cerebral rheumatism. The administration of salicylates to such patients does not seem in general to be associated with unusual danger and among the cases reported by Dr. Taylor was a patient with cerebral rheumatism who received on one occasion 1,000 grains of the synthetic salicylate within 60 hours and on a second occasion he became delirious after taking 320 grains of the natural salt, the delirium being attributed to the rheumatism. Even though for the sake of argument, one attributes these deaths in part to the salicylates administered, there is no reason for assuming that the natural salt would have acted differently from the synthetic salt, for all the other data of this report show that the action and the toxicity of the two are identical.

CONCLUSIONS

The result of the cooperative investigation as to the relative therapeutic value of sodium salicylate derived from natural sources and of sodium salicylate prepared by synthetic methods shows no essential differences between the two. This was demonstrated not only by the opinions of those investigators who attempted to classify the effects of their powders but also by a study of all the reports submitted. The slight variations in one direction or the other as shown by our figures are such as one expects in any set of statistics. Indeed, the statistical variations in these figures are surprisingly small. Allowing, therefore, for statistical error, one must conclude that natural and synthetic sodium salicylate are indistinguishable so far as their therapeutic and toxic effects on patients are concerned.

THE TECHNIC OF ROENTGEN-RAY EXAMINATION OF THE GASTRO-INTESTINAL TRACT, AND THE INTERPRETATION OF SCREEN AND PLATE FINDINGS *

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The fundamental principle of Roentgen-ray examinations of the stomach and intestine is the visualization of their outline by filling them with substances opaque to the ray, a principle which we owe to Rieder, of Munich, who, in 1904, first used bismuth subnitrate for the purpose. From this has evolved the present-day technic of radiography of the digestive tract, the evolution being contributed to in minor particulars by numerous roentgenologists, and in major particulars by a few men of whom Holzknecht and Haudek stand out with signal prominence.

The occasional toxicity of bismuth subnitrate soon led to its supersession by bismuth subcarbonate and later the oxychlorid. Zirconium oxid has also been employed to some extent abroad. Chemically pure barium sulphate, because of its cheapness, has come into very general use both for enemas and for the opaque meal.

Bismuth subcarbonate is in common use. By its alkalinity peristaltic activity is depressed somewhat. The oxychlorid being lighter, is consequently better held in suspension. It does not interfere with peristalsis.

The finding of a suitable medium for the administration of the opaque salts by ingestion at the time of examination has given some difficulty. It is desirable that the mixture be more or less palatable, that it be thick enough to hold the opaque salt in good suspension, yet not too thick to fill all recesses, that it be not too stimulative of gastric secretion, and that it do not suppress peristalsis or produce early pyloric closure. When a large number of cases are examined the cost becomes a matter of importance.

The vehicles commonly used include water, milk (plain, condensed or fermented), mucilage of acacia,

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* From the Mayo Clinic.

potato-starch, and various cereals. Each of these has its advantages and disadvantages, depending on the purpose in view. For the six-hour Haudek meal a cereal, such as one of the wheat breakfast foods, with a little sugar and cream or fruit syrup, is desirable. At the beginning of the screen examination a little plain water and bismuth facilitates palpatory outlining of the borders of the stomach, and by not exciting the pyloric reflex can ordinarily be expressed into the cap and duodenum, thus visualizing them. For complete filling of the stomach, preparatory to radiography, the bottled proprietary fermented milks are admirable. They are relished by most patients, hold the bismuth in good suspension, and do not hinder peristaltic action. Mucilage of acacia, freshly made from the powder or gum, is effective, but not pleasant to take. The semi-condensed milk holds up to the bismuth fairly well and is palatable. Owing to its contained fat, peristalsis is much diminished. Two ounces of potato-starch in 6 or 8 pints of water, well stirred and brought to the boiling point (after the Gourevitsch formula) makes an excellent medium. It can be flavored with fruit syrup to suit the taste.

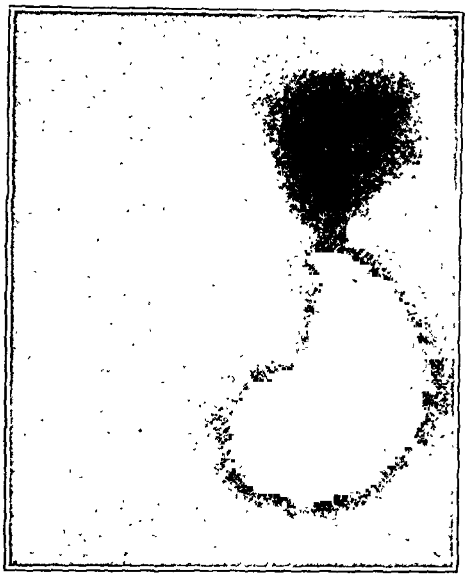

Fig. 1 (A—80973, X-ray 19835).—W. E. W., woman, aged 44. Radiogram shows a "fish-hook" stomach. There was no residue after six hours. It shows a projection on the lesser curvature, which is the bismuth-filled crater of a callous ulcer, and a marked transverse contraction of the greater curvature (incisura) opposite this niche. Diagnosis: Callous ulcer on lesser curvature. Operation: Excision of ulcer on lesser curvature about 5 inches from pylorus with surrounding fibrous tissue; gastroduodenostomy. Pathologic report: Gastric ulcer, scar tissue. (Clinically, this patient's symptoms were quite insufficient to establish the diagnosis and she was about to be sent home when an *x*-ray examination was made.)

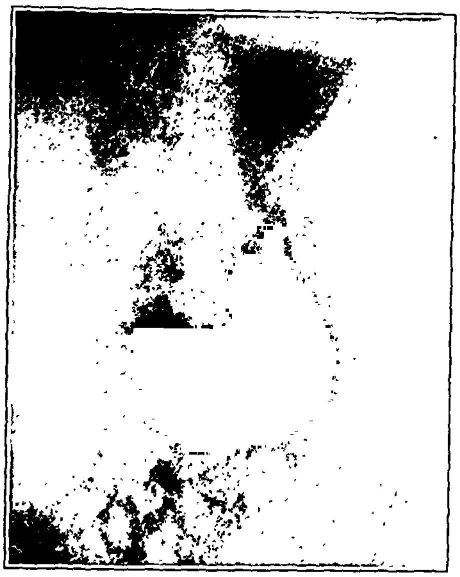

Fig. 2 (A—83115, X-ray 20799).—A. C., woman, aged 62. Radiogram shows "fish-hook" stomach with a moderately large projection on the lesser curvature which was regarded as a perforating ulcer. No transverse contraction seen. Small residue after six hours. Operation: Resection one-half middle of stomach; end-to-end union. Pathologic report: Carcinomatous ulcer with glandular involvement.

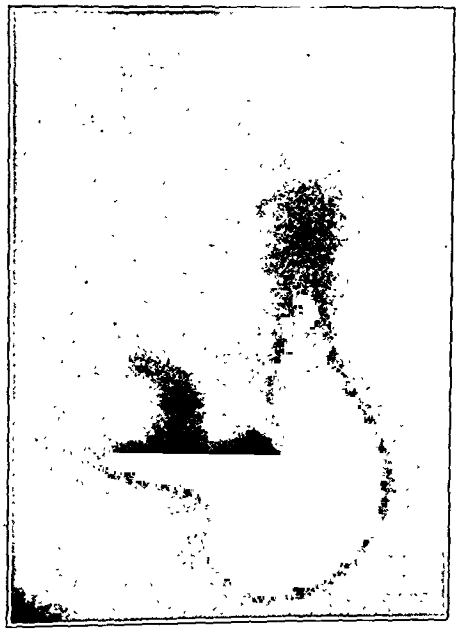

Fig. 3 (A—80993, X-ray 19816). — Mrs. J. K., aged 37. Radiogram shows cap and duodenum visualized throughout, with lagging of bismuth. No residue after six hours. This picture is frequently seen in duodenal ulcer and illustrates the necessity of correlating the *x*-ray with the clinical findings. Operation: Cholecystectomy for typical strawberry gall-bladder with a diverticulum.

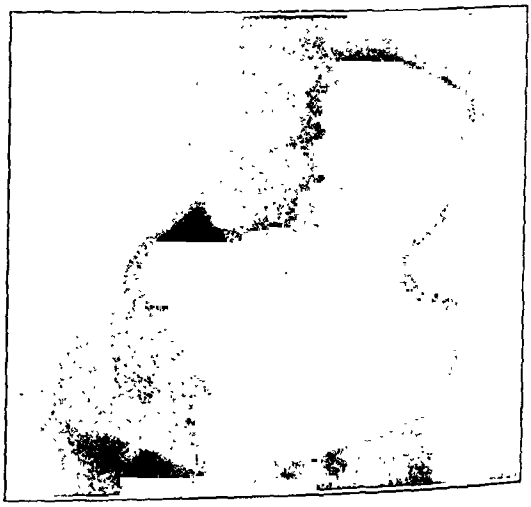

Fig. 4 (A—74843, X-ray 17585).—O. H. L., man, aged 57. Radiogram shows marked filling defect of the pars cardiaca and media. Possible carcinoma of stomach. Operation: Carcinoma, cardiac end of stomach. Extensive glandular involvement. Also metastasis in pelvis.

The essentials of an opaque enema are: (1) that the mixture shall not be irritating to the bowel; (2) that it shall be sufficiently large to fill the entire colon; (3) that it shall be sufficiently fluid to flow freely and fill recesses, yet thick enough to hold the bismuth in good suspension.

Barium sulphate, bismuth subcarbonate and bismuth oxychlorid are each commonly used as a base. Barium sulphate serves the purpose well and is far cheaper than bismuth. Bolus alba (kaolin) is added by some.

For mediums, mucilage of acacia, fermented milk, condensed milk, mucilage of tragacanth, potato-starch, and other vehicles are employed. Any one of them can be used satisfactorily. The potato-starch is more economical, but has the occasional disadvantage of becoming lumpy and obstructing the enema tube unless filtered.

The medium should be from 50 to 60 ounces in amount, should contain from 4 to 6 ounces of bismuth (subcarbonate or oxychlorid) or from 6 to 8 ounces of barium sulphate, thoroughly mixed, should be warmed to or slightly above the body temperature, and should be administered by gravity-pressure from a height of from 3 to 6 feet. The ordinary hard-rubber saline tip is sufficient, the so-called high enema being unnecessary. The rubber tubing should be equipped with a spring-clip cut-off.

After completion of the examination the patient should evacuate the enema at once. I have not found purgatives necessary afterward, nor has caking of the bismuth or barium in the bowel, as mentioned by some radiologists, occurred to my knowledge.

In those cases in which the opaque enema meets with complete obstruction at any point, it may be supplemented by an opaque meal. By watching the progress of the latter the proximal limit of the obstruction can thus be determined.

Proper preparation of the patient for examination is important. In order that the bismuth may fill and outline the stomach and bowel it is obviously necessary that they be evacuated beforehand as completely as possible. In most cases this can be effected by the administration of a saline, or castor oil the evening previous to the examination, and, if an opaque enema is to be given, the patient should also wash out the bowel with a soap-suds injection early on the morning of examination. Even with these precautions there will be more or less annoyance to the examiner from gas in the bowel, and the roentgenologist who can devise a technic which will entirely eliminate this annoyance will indeed be fortunate. The patient should abstain from food from the evening previous to examination until after its completion.

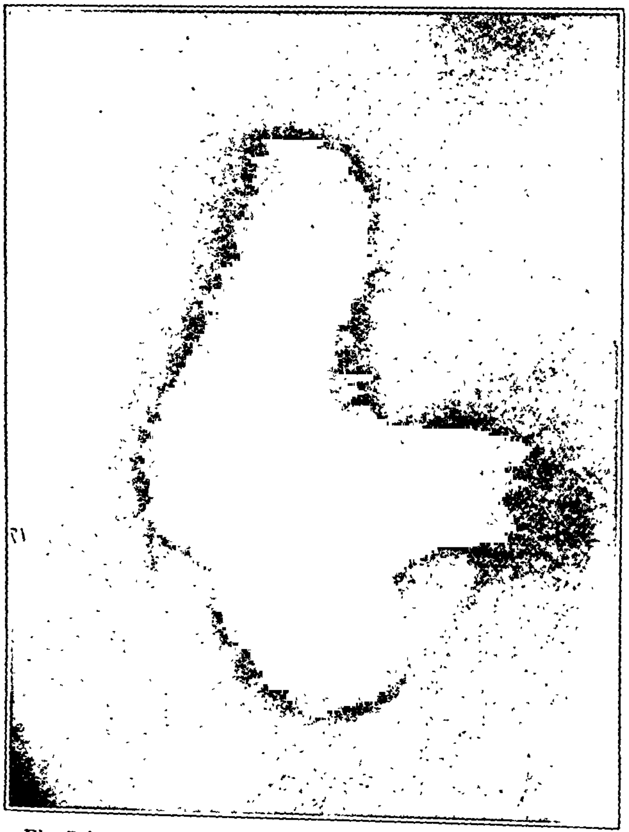

Fig. 5 (A—80026, X-ray 19406).—R. B. B., man, aged 37. Radiogram shows obstruction of descending colon and sigmoid, probably due to tumor. Exploration: Tumor of sigmoid 7 inches long fixed to the bladder and left side of pelvis. Inoperable carcinoma.

A uniform technic in regard to opaque ingesta and injecta will give a stable basis of comparison and greater uniformity of results.

PROTECTION

Fluoroscopy being so advantageous in gastro-intestinal work, attention is directed anew to its possible dangers. With the disasters which have befallen pioneers in Roentgen-ray work fresh in our minds, we have an acute, perhaps exaggerated sense of the hazard attending such work, especially screen work. I would not urge any roentgenologist to take risks which to him seem imprudent and which might possibly result in his injury, but candor compels me to express my very sincere belief that we have gone from one extreme to the other, from extraordinary and ignorant rashness to extraordinary and unnecessary caution. This excessive caution is shown in much of the modern screen apparatus. In the effort to secure protection many of the installations have been made complicated, unwieldy, and often inefficient. Access to the patient for close inspection and palpation has been rendered difficult or even impossible, and the screen examination thus "denatured" loses half its interest and value. In a personal communication, Haudek states that with quite simple apparatus he has screened over 12,000 patients without harm to himself or to them.

The apparatus which I have used for several years, making hundreds of screen examinations in that period, without the slightest injury to the patients or myself, of which I am aware is not at all complicated. The tube is encased in a box thickly painted with lead oxid, mounted on a shaft, which is given free vertical and lateral movement by means of counterweights within the upright standards at each end of the shaft. The opening in the tube-box has a rectangular diaphragm. Immediately in front of this is a shield of sheet lead ⅛ inch thick, 7 feet high and 5 feet wide. A central panel of this shield is cut away and replaced by a thin sheet of aluminum against which the patient leans. The screen hangs in front of the patient from an arm attached to the tube-box with which it moves in unison. I usually wear a leaded rubber apron and gloves. A portable switch-table stands conveniently at the left, and a foot-switch on the floor.

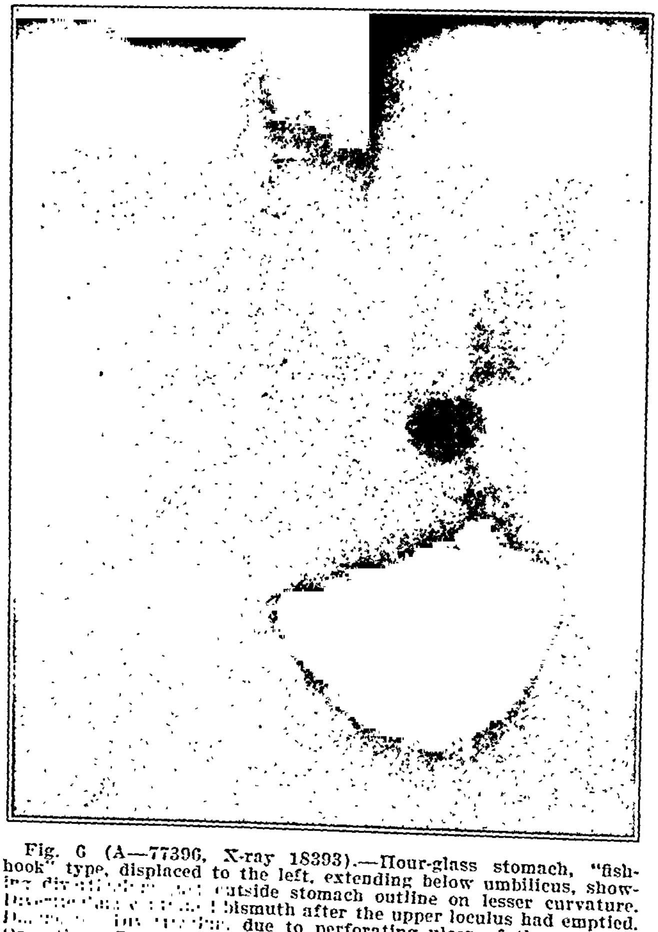

Fig. 6 (A—77396, X-ray 18393).—Hour-glass stomach, "fish-hook" type, displaced to the left, extending below umbilicus, showing [illegible] outside stomach outline on lesser curvature. [illegible] bismuth after the upper loculus had emptied. [illegible] due to perforating ulcer of the stomach. Operation: Perforating gastric ulcer of stomach, perforating into the liver.

After the screen examination, plates are made with the patient in a standing posture, an adjustable tube-stand being used, and the cassette fixed on a movable wooden bracket attached to the wall.

For examinations of the colon we use a lead-lined wooden table, open on the side away from the operator.

Beneath this the tube, mounted on an arm, swings freely in every direction in unison with the screen attached to another arm above the table. At the foot of the table is an upright with pulley and cord for adjusting the enema-container at various heights. The top of the table is of canvas, on which the patient lies. The tube has an iris diaphragm.

Before beginning a screen examination the observer will find it advantageous to remain in the dark-room for from ten to twenty minutes in order to give his eyes a maximum of accommodation. He will thus be enabled to see details on the screen which would otherwise be invisible. A pair of closely-fitting, smoked-glass goggles, to be worn whenever it is necessary to turn on the room lights, will help to maintain the accommodation and lessen eye-strain.

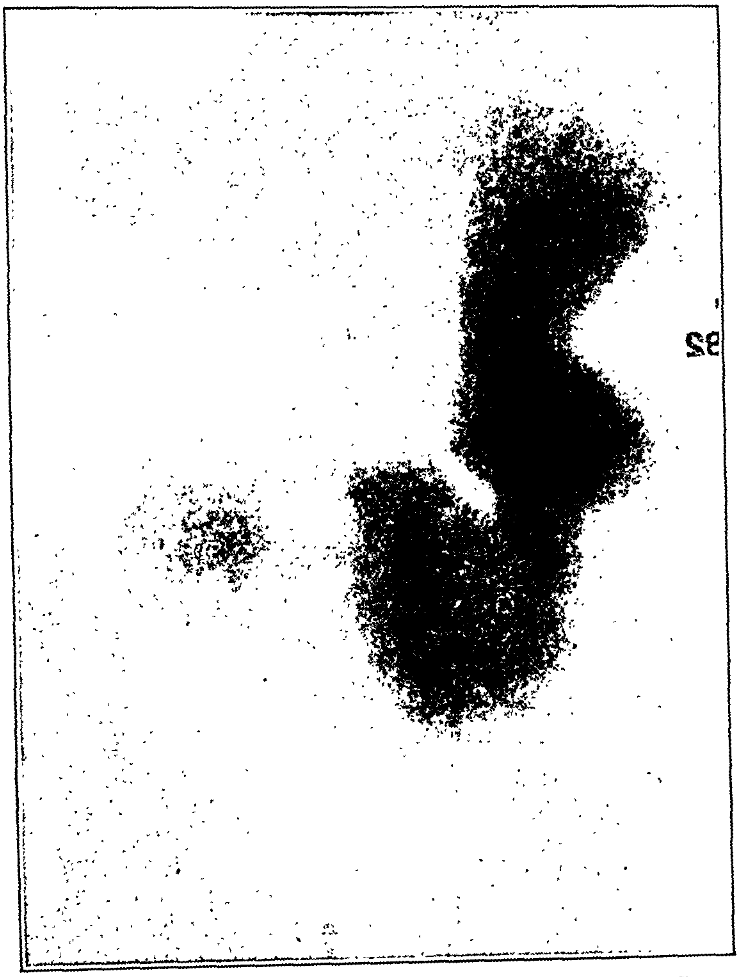

Fig. 7 (A—79785, X-ray 19282).—D. A. C., man, aged 52. Screen showed a large six-hour residue. Tremendous peristalsis showing 3 cycles. Diagnosis: Pyloric obstruction. Operation: Large duodenal ulcer, size of a penny Very marked obstruction, lumen reduced to size of a lead-pencil. Operation Heincke-Mikulicz type, without pyloroplasty.

A ROUTINE EXAMINATION OF THE STOMACH

Having taken an ounce of castor oil the evening before, the patient reports in the morning without breakfast. He is then given an ordinary portion of wheat-meal porridge into which two ounces of barium sulphate has been well mixed, together with a little sugar and cream. He is directed to abstain from further food until after the examination and to return six hours later. On his return he is stripped down to the hips; the screen is placed against the abdomen and the presence or absence of residue in the stomach from the morning meal noted.

Next the "head" of the barium column, that is to say, the most advanced position in the intestine of the six-hour meal, is determined. Commonly this will be in the cecum but it may be anywhere from the stomach to the rectum, depending on the patency and motility of the tract.

The patient now drinks rapidly 6 or 8 ounces of water containing 1½ to 2 ounces of bismuth subcarbonate, well stirred. Its entrance and descent into the stomach are carefully watched. When all has been drunk, the observer palpates toward the pylorus and by this effleurage is often able to drive a quantity through into the duodenum, thus visualizing it. He then presses the bismuth in the stomach upward, watching the outline of the greater and lesser curvatures.

Sixteen ounces of potato-starch pap containing 2 ounces of bismuth subcarbonate and flavored with syrup of raspberry are then drunk by the patient. Usually this fills the stomach quite well, outlining it clearly. Irregularities which may have been previously observed with the bismuth water are palpated to determine their nature and permanence. Mobility and peristalsis are also determined.

Two or three plates are now made, the patient standing with his abdomen against the plate-holder, with the upper edge of the plate at or near the nipples.

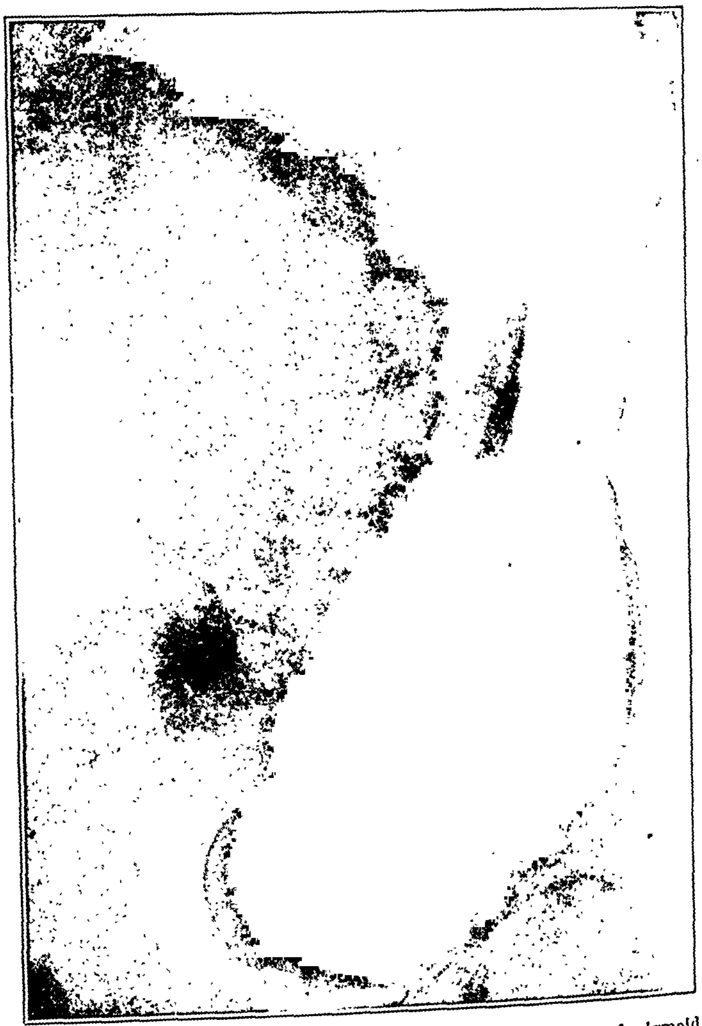

Fig. 8 (80853, X-ray 19797).—Marked redundancy of sigmoid with loop folded on itself. Marked obstruction transverse colon near splenic flexure, no bismuth going beyond point of obstruction. Remainder of transverse, ascending colon and cecum contain a small amount of colonic gas. Diagnosis: Probable tumor of transverse colon. Operation: Carcinoma of transverse colon.

A ROUTINE EXAMINATION OF THE COLON

Having taken an ounce of castor oil the evening before, and a cleansing soap-suds enema the morning of examination, the patient strips and lies on his back on the colon-table. The enema, 16 ounces of mucilage of acacia and 3 cans of condensed milk with 8 ounces of barium sulphate, is warmed to body temperature, put into the container and elevated from 3 to 6 feet above the table. The syringe-tip is introduced into the rectum and the flow released by the spring-clip. On the screen the enema is seen slowly to fill the ampulla, then successively the sigmoid, descending, transverse and ascending colons and the cecum, occasionally passing the ileocecal valve into the ileum, and, more rarely, filling the appendix.

The abdomen is palpated at intervals to determine the mobility and elucidate eccentric loops and apparent kinks of the bowel. If definite obstruction, not disappearing on massage is met with, or if the patient complains greatly of discomfort, administration of the enema is stopped.

The plates (14 by 17) are made with the patient standing or reclining, or both.

SIGN GROUPS

The various diagnostic indications above discussed[1] may be synthesized into sign complexes. For example, the radiologic evidences of gastric ulcer comprise:

1. The diverticulum of perforating ulcer.
2. Visualization of the bismuth-filled crater of a callous ulcer.
3. The incisura, or transverse contracture, indenting the greater curvature.
4. Localized-pressure tender point on the lesser curvature.
5. Residue after six hours.
6. Acute "fish-hook" form of the stomach, with displacement to the left and down.
7. Delayed opening of the pylorus.
8. Settling of the bismuth to the lower pole of the stomach, such as is seen in hypotonicity or atony.

The Roentgen-ray signs of gastric cancer include:

1. Filling defects.
2. Diminution in size.
3. Lessened mobility.
4. Stiffening and gaping of the pylorus, as shown by a free and continuous outflow of bismuth from the stomach.
5. Absence of peristalsis from affected portions of the wall of the stomach.
6. Antiperistalsis.
7. Residue after six hours, if the pylorus is obstructed, or, on the other hand.
8. If the pylorus is unobstructed, hypermotility, with early clearance of the stomach and an advanced position of the six-hour meal in the intestine.

In duodenal ulcer there may be:

1. Early free opening of the pylorus, with early clearance of the stomach.
2. Lagging of bismuth in the duodenum.
3. Residue in the stomach (sometimes in the duodenum) after six hours, if there is an obstruction from scar contraction.
4. Pressure-tender point over the duodenum.
5. Dilatation of the cap.
6. Irregular outline of the cap or duodenum.
7. Diverticulum of perforating ulcer.
8. Vigorous peristalsis, especially if there is obstruction.

Radiologic diagnosis of duodenal ulcer, unless corroborated by clinical data, is in most instances a mere guess. Excluding obstructive cases, the Roentgen-ray appearance of duodenal ulcer is often seen when the actual lesion is elsewhere, as in the appendix or gallbladder.

INTERPRETATION OF THE PLATE

Discussion of the relative superiority of the screen or the plate is useless. There is no competition between them. Each serves certain purposes. Both are necessary for satisfactory gastro-intestinal work.

The plate gives a permanent record. It gives finer detail, and permits longer and closer study of minutiae than does the screen. Stereoscopic plates are especially interesting and valuable in many instances.

Recording, as it does, a single momentary phase of the conditions, interpretation of the plate must be guarded. Compression of the stomach between the spine and the plate may produce an apparent filling defect of the pyloric end of the stomach or even an apparent hour-glass. Incessant systole and diastole of the antrum make it appear vague and indefinite on the plate.

Bismuth poorly suspended may settle irregularly and give rise to the appearance of filling defects on the plate. What seem on the plate to be kinks, narrowings or obstructions of the small or large intestine, are very rarely such. Even serial plates have an element of uncertainty.

Mobility, peristalsis, the presence or absence of deformities, filling defects, or incisurae, must all be determined by the screen examination, during which every phase of movement can be seen, the patient can be turned about for vision at different angles, and the effect of palpation can be noted.

METHOD OF RECORDING FINDINGS

At intervals during the screen examination, the observer or his assistant hastily notes on a scratch sheet the more important facts elicited, together with any striking features of the anamnesis. Most of this is easily done by checking or underscoring the appropriate item.

From a comparison of the screen findings with the plates the final conclusions are drawn. These are entered, mostly by underscoring, on the permanent record sheet.

Visualization of a cancer of the stomach with obvious filling defects, or a gastric ulcer with a characteristic incisura or a niche is so dramatic that the exuberant enthusiasm thus aroused has unfortunately created the impression in some quarters that the Roentgen-ray is ready to supersede the ordinary clinical methtods of diagnosis. This impression should be discouraged, for in the vast majority of instances the ray is only a link in the chain. The x-ray is not a rival of clinical methods, but a most valuable adjunct thereto, and worthy of routine employment.

To maintain a proper conservatism in the interpretation of roentgenologic findings is difficult, yet absolutely necessary. We should remember, among other things, that only a very small percentage of those who complain of gastric symptoms have gastric lesions.

Roentgenologists have reason to be proud of the tremendous advances which have been made in the radiology of the digestive tract, but it behooves us to be careful that the record shall not be marred by overenthusiasm or by long lists of conclusions drawn from short lists of cases.

The Roentgen-ray findings, unless extraordinarily marked and decisive, should be correlated with the anamnesis, the laboratory reports, the clinical data, and always with common sense. There are cases of ulcer and cancer of the stomach and obstruction of the bowel in which the combined fluoroscopic and skiagraphic findings are of themselves sufficiently determinative to justify a diagnostic opinion. But there is a greater number of cases in which the combined x-ray examination will merely elicit suspicious or even only eccentric appearances, a percentage of these being due to real lesions, a larger percentage accompanying only functional disturbances. Here opinions should be advanced with the greatest caution, and the final diagnosis should rest on all the evidence obtainable from every source. This necessitates an extensive correlation, a broad knowledge based on experience, and a careful judgment.

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[1] See reprint of article in full for discussion of diagnostic indications.

ABSTRACT OF DISCUSSION

Dr. Archibald MacLaren, St. Paul: Plate machines and coils occasionally will take stomach and intestine pictures that are really very good; but both of these machines are so unreliable that they cannot be depended on. After spending a large sum of money for the largest coil made I had to throw it away because it would not make the kind of pictures that I wanted. The only machines that are certain are those of the dynamo type, of which there are three or four good makes on the market.

I wish to confine my remarks to one phase of this question, and that is gastroptosis. When Goldthwaite of Boston showed the first stomach and intestine picture some years ago, before the Ramsey County Medical Society, we were stimulated to see whether we could not get pictures of the stomach and intestine which were worth while. With the Snook machine my associate, Dr. Daugherty, commenced to take pictures of the stomach, and found first, that it was much lower than we had supposed and much lower than we had seen it even on the operating-table. The next thing of importance was the relaxation of the pyloric end of the stomach. The first cases in which we made these pictures were mostly of young women of the neurasthenic type, who had failed to get well after operation in our own hands for a chronic relapsing appendicitis. I have seen many of these cases, and without the stomach pictures we have not been able to be sure that they were cases of chronic appendicitis.

The statement has often been made that it takes a year to get over the operation for chronic appendicitis, but that is not true; many of these slow cases after operation never had any trouble with the appendix. That is the type which the internists and neurologists ever since the time of Weir Mitchell have been curing with the rest-cure. Put those patients to bed when they have these relaxed atonic stomachs, give them six meals a day, and they get well much better than they do after an operation.

Dr. James T. Case, Battle Creek, Mich.: Dr. Carman did not discuss the relative value of roentgenography and roentgenoscopy. I believe he relies considerably on screen examination. I should like to ask him, in closing, to make a statement as to his practice. Roentgenograms present a very nice map of the static conditions present, but give relatively little of the information obtainable by means of fluoroscopy when one employs intelligent manipulation of the bismuth shadows under the guidance of the fluorescent screen examination.

A laxative is recommended by Dr. Carman before each examination, both before the bismuth meal examination and before the injection of the bismuth clysma. My idea is that it is best to omit laxatives. We want to examine the patient as he lives from day to day, and therefore in studying gastro-intestinal motility; I think that it is important not to give laxatives before the bismuth-meal examination. The bismuth injecton gives but little information as to the motility of the bowel.

Dr. Carman said that he attached small importance to the fact that the appendix is occasionally shown in the plate. Whether or not it is pathologic for the bismuth to pass into the appendix, I am not sure, but the fact remains that when the shadow of the bismuth can be seen in the appendix, a number of facts may be ascertained with very great accuracy. The size and shape of the lumen of the appendix; whether it is narrow near the cecal end and likely to be the seat of stasis, or whether it is broad uniformly throughout its length; whether the bismuth remains in the appendix for only a few hours or for fifteen or twenty days; the position of the appendix—whether it is retrocecal, down in the true pelvis or adherent, and other such facts may be ascertained. Accurate identification of a localized pressure pain-point in the appendiceal region is often possible by this method. That this information is frequently obtainable is obvious when I tell you that one-fifth of the cases I have examined following a bismuth meal, in which the appendix has not already been removed, show a patency of the appendix. I now have over two hundred and fifty individual cases in which the appendix has been patent and, therefore, capable of being studied.

Dr. C. E. Ruth, Des Moines, Iowa: I believe that we somtimes make mistakes in reading these findings. I have felt several times that, while I had my information in advance of what the picture was supposed to show, I had better have the man who took the picture interpret it for me. I was glad to hear what Dr. Carman said with reference to exploratory operations, to determine what is the matter in the abdomen, having been too frequent in the past. Many of the patients with chronic appendicitis who have been operated on are in no sense relieved because there was nothing wrong with the appendix originally or because of adhesions or complications that resulted from the operation. Only a few days ago a patient came to me who was operated on five years before, with absolutely no relief whatever from the symptoms of supposed appendicitis, for which the appendix had been removed. A good fluoroscopic and roentgenoscopic examination gave us a picture that showed the cause of the trouble. The cecum was low and the colon had doubled back on itself forming an acute angle at the hepatic flexure then down into the pelvis, thence upward at another acute angle to the left somewhat near the normal position of the hepatic flexure. It was impossible to get the bismuth to pass in any considerable quantity. At a point almost on a level with the normal site of the iliac crest, there was a sharp angulation as the transverse colon attempted to reach the splenic flexure. We diagnosed a band causing partial obstruction at this point. The operation showed the band to be present. It was omentum as large as my finger passing from what we believe to be the normal position of the middle of the transverse colon down to the right iliac fossa, being anchored there firmly. It was quite evident that this was the result of the omentum having been forcibly drawn down and secured by suture or other means at the time the operation for supposed appendicitis was done or, having been present before, was the cause of the symptoms supposed to be produced by appendicitis. The patient experienced relief as soon as the discomfort from the operation was passed which released this band. From the many roentgenograms that have been taken recently I feel that we must reduce at least by half the exploratory operative undertakings that have been made in the past, until we have secured a good picture of the condition of the stomach and colon and have evidence that will enable us to plan for an operation intelligently, and that we must do this before we have opened the abdominal cavity and pawed over its contents for half an hour to get an intelligent idea of the needs of the case.

Dr. B. W. Sippy, Chicago: The maximum benefit from roentgenoscopy is to be obtained only in conjunction with careful clinical work. If we are to avoid numerous mistakes in our work, we should compare the roentgenoscopic findings with most careful clinical observation. We must not leave out any of the older methods of determining the conditions present if we wish to succeed. The Roentgen ray alone, as Dr. Carman stated, may lead to serious mistakes.

One word as to the use of atropin in connection with spasm. We have been led to believe that spasmodic contractions of the stomach and bowel will almost invariably show a great tendency to become relieved if we give atropin or belladonna. I want to report one case in which that was most deceptive. The roentgenogram showed an hour-glass stomach. It was a beautiful picture, taken by a competent man. The patient was referred for operation. Three or four pictures taken in succession showed the hour-glass stomach almost in the same position each time. Two or three weeks afterward the condition present was the same. There were no clinical symptoms and a careful analysis of the case showed that there had been pain present almost as in gall-bladder disease, but other symptoms were not present—nothing in the blood-vessels or stomach-contents; in fact, observing the patient for a week at a time failed to elicit any clinical evidence of disorder of the stomach, and still the pictures showed the hour-glass stomach, no matter whether a plate or the screen was used in the examination. Under three weeks' use of atropin and belladonna, pushed to physiologic limit, the hour-glass condition still existed in the same position. The picture showed this hour-glass stomach continuously and justified surgical intervention. This one case shows positively that the Roentgen ray is either of enormous value or absolutely worthless. The operation showed that there was nothing wrong with the stomach at all. There was a persistent spasmodic condition of the stomach lasting for four weeks, and it remained absolutely unchanged by enormous doses of atropin and belladonna.

Dr. M. F. Porter, Fort Wayne, Ind.: Had a picture been taken of that stomach prior to the operation, while the patient was anesthetized, a diagnosis of absence of hour-glass contraction of the stomach would have been made. It is a good plan occasionally to take a picture under anesthesia.

Dr. R. D. Carman, Rochester, Minn.: With reference to Dr. Case's remarks about the use of the screen I wish to say that all our patients are screened carefully. Plates are made only for reference purposes and to detect those details which might be overlooked on the screen. In regard to the use of cathartics, we would rather have the stomach empty and be able to exclude a filling defect due to cancer, than to know anything about the motility. This can be much more accurately determined by the gastro-enterologists. With reference to the appendix, I do not think we need worry about that. MacCarty observed only five or six normal appendixes in his examination of over 25,000 specimens. In the hour-glass stomach, which Dr. Sippy mentioned, I think possibly the contraction was due to a small ulcer or erosion which was not detected by the surgeon. These small ulcers or erosions which may produce a persistent hour-glass contraction of the stomach, even not affected by enormous doses of atropin and belladonna, such as were given in this case, could be easily overlooked. There certainly must have been an ulcer or erosion in this case.

INTRACRANIAL DIVISION OF THE AUDITORY NERVE FOR PERSISTENT TINNITUS *

CHARLES H. FRAZIER, M.D.
PHILADELPHIA

The surgery of the cranial nerves offers an interesting field for those who have made the treatment of nervous lesions an object of especial study. Perhaps because the symptoms to which these lesions give rise are not of serious moment in that they do not threaten life, or whatever may be the explanation, the fact remains that an insignificant number of people avail themselves of the relief that surgery affords. How many there are, who for a greater part of their lives endure the unpleasant disfigurement that follows a complete facial palsy, without so much as considering the possibilities of correction that surgery offers! And yet the facio-hypoglossal or the facio-accessory anastomosis is an operation carefully planned and fully justified by the results. Similarly with trigeminal neuralgia, it may be said that whether because of ignorance or indifference on the part of the profession or prejudice on the part of the patient, there are a surprising number who for years suffer as excruciatingly as they do needlessly. It is not an exaggeration to say that the majority of patients with trigeminal neuralgia sent to me for advice and treatment have been victims of the disease for at least ten years and many for twice as many, and this in face of the fact that absolute relief may in many instances be afforded without resort to a general anesthetic or the risks, real or imaginary, of an operative procedure, as is the case with alcoholic injections.

I have taken this opportunity to dwell on the delay and procrastination in resorting to surgical procedure, because it seems to me a matter of very considerable moment. There is a woeful indifference to the actual needs and comfort of patients, not only those suffering from conditions already mentioned, but from tumors and lesions associated with increased intracranial tension. The records of cases in my clinic reveal the rather pathetic situation of two out of three patients already blind, that is with an optic atrophy so far advanced that recovery of vision is entirely out of the question. Of all the benefits to be derived from operative procedures in this class of cases, preservation of vision is perhaps the greatest and at the same time the one most longed for by the patient. Now, the surgeon does not see these cases, as a rule, as soon as the neurologist, and the latter has the greater opportunity of impressing on the family physician the obligation, clearly his, to lay clearly and fairly before the patient the possible accomplishments of surgical therapy. The so-called expectant form of treatment so popular and so delusive is, as Sir Victor Horsley says, not treatment at all, but in most instances a tacit acknowledgment on the part of the physician that he has been unable to make a diagnosis or, if not, to inaugurate an effective course of treatment.

Up to the present time surgical therapy has been applicable to the treatment of functional disturbances in only three of the cranial nerves—the trigeminal, facial and auditory—and of these the auditory nerve has been the last to be brought within the scope of surgical procedure. Now what has been said of the infrequent resort to surgical measures for the relief of lesions of the trigeminal and facial nerves may be said with equal, if not greater, force, of the eighth or auditory nerve.

The operation which I am about to describe is the intracranial division of the auditory nerve. There are several circumstances in which this procedure may be resorted to with propriety. In 1908, Dr. Charles K. Mills discussed the propriety of this operation for the relief of aural vertigo, and so far as I know the operation had not been thought of before in this connection. His patient was a woman in her fifty-fifth year, and the method of procedure and the outcome of the operation have already been made a matter of record.[1] One naturally inquires whether as much relief might not be derived from the removal of the semicircular canals, an operation perhaps less formidable, and therefore to be given preference. There is no doubt but that the latter operation should be selected when the vertigo is unassociated with tinnitus, but it so happens that in many instances we find the vertigo and tinnitus combined, and it is for this particular situation that the

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Surg., Gynec. and Obst., November, 1912.

operation on the auditory nerve is more specifically indicated.

Consideration should be given to relief that might be afforded certain forms of persistent otalgia by division of the auditory nerve. So far as I know there are no available records in which the effect of this operation has been tried, and the situation is somewhat complicated by the fact that, as Hunt[2] has pointed out, there may be, as one of the underlying factors, an associated lesion of the nervus facialis. We are all familiar with the clinical syndrome which Hunt has elaborated from his careful and original studies of the sensory mechanism of this nerve through its various connections; the relation of the geniculate ganglion to the interior of the auricle and the external auditory canal, the connection of the ganglion with the tympanic plexus, etc. If, as Hunt maintains, there may be in certain cases of persistent otalgia a neuritis of both the seventh and eighth nerves, it would be necessary to divide them both. To be called on to divide both nerves would simplify rather than complicate the intracranial technic, and the inevitable facial palsy might be considered an unsurmountable objection, although the patient might prefer the consequent facial asymmetry to the continuation of his affliction. In this connection, however, it is worthy of mention that in some instances a preexisting facial palsy is a part of the syndrome, and under such circumstances the facial nerve could be divided with impunity.

For final consideration of the indications for this operation, there remain cases of persistent and intractable tinnitus. Ordinarily, tinnitus aurium responds to local treatment, but the cases to which I have reference are those of a type so severe as to be the underlying cause of grave neurasthenia or serious mental disturbances, and both have been the cause of threatened suicide. In some instances, the tinnitus may be the only affliction; in others it is associated with vertigo or otalgia. To be sure, the selection of cases is a matter of considerable importance, and whenever possible those of central origin should be excluded. The appropriate cases are those in which the disease is labyrinthine in origin; it may originate in the vestibular ganglion, in the cochlear ganglion or in both, but as there is no means of separating the cochlear from the vestibular division, the entire auditory trunk must be sacrificed. It may be said further that the most promising cases are those in which there is loss of air conduction, with preservation of bone conduction, cases with definite cochlear lesions in which the tinnitus is low-pitched.

No doubt the deafness resulting from complete section of the auditory nerve has occurred to you as a possible objection to the operation, and this would have to be given consideration were it not for the fact that as a rule the patient is already deaf on the affected side.

Time will not permit of a consideration of the conditions which are responsible for the development of tinnitus, but I should like here to refer to an interesting case which, within the last year, was brought to my attention:

History.—The patient, a comparatively young man, in his thirty-fourth year, was sent to my clinic by Dr. L. C. Suttner of Walla Walla, Washington. He had been struck on the head by a falling limb of a tree. Immediately after the accident he became unconscious and remained in this state for five hours. Almost immediately after regaining consciousness, five hours later, he observed a ringing in his right ear. On leaving his bed he noticed that in going up or down stairs, when standing with eyes closed, or in turning his head suddenly, particularly to the right side, he became dizzy and occasionally became nauseated. In addition, there was impairment of sensation in the distribution of the trigeminal nerve, particularly in the third division, and complete loss of vision on the affected side.

Physical Examination.—Patient is well-developed, robust and well-nourished. Skin is normal; no cyanosis, jaundice, edema or eruptions. Arteries are not sclerosed. There is a sense of numbness over the left temporal region, extending down below the molar eminence and even to the left side of the nose. Patient can close his eyes, wrinkle his forehead, contract his masseters, show his teeth, pucker the corners of his mouth, equally and well on both sides.

Heart: Outline normal; sounds regular and of good muscular quality; suggestion of systolic murmer at the apex. Abdomen negative.

Extremities (lower): Good muscular force; no incoordination; knee-jerks prompt; no ankle clonus; no Babinski. Gait seems somewhat uncertain. Station negative. Extremities (upper): Normal; no incoordination.

Blood: Red blood-cells, 5,500,000; white blood-cells, 13,200; hemoglobin, 87; polymorphonuclears, 65; lymphocytes, 31; large mononuclear, 1; transitionals, 2; eosinophil, 1.

Urine: Amber; light flocculent sediment specific gravity 1.025; slight acid; no albumin or sugar; no casts, cylindroids, or red corpuscles; considerable mucus; a few leukocytes; squamous epithelium; calcium oxalate crystals.

Examination of the ears by Dr. Randall: There is some nerve deafness in the left ear, namely, for low tones, as he claims to hear the 2,000 d. v. s. fork and many tones (notes) of the Galton whistle. His left naris was stuffy, a possible source of his tinnitus, but its freeing gave no relief, nor did the Politzer inflation or massage. His left drumhead is scarred, but with little trouble remaining. There is no objective bruit as of aneurysm. His injury would seem to have been on this side and to have pinched the fifth and eighth nerves.

Examination of eyes by Dr. de Schweinitz: Right eye: normal; vision 6/5. Left eye: optic nerve atrophy; probably secondary to lesion at base. Pupils react. No muscle palsies. Ocular symptoms suggests basal lesion anterior to chiasm.

Blood-Pressure: Systolic 125; diastolic 80.

Diagnosis.—Unquestionably, there must have been a fracture of the base, beginning in the petrous bone and extending forward to the optic foramen; for in no other way could one account for the trauma to the optic, trigeminal, and auditory nerves The associated injury of these three nerves is a very unusual one, and in my experience quite unique. It is not common to find a simultaneous injury to the nerves of the posterior fossa and one of the anterior fossa, and while this is worthy of comment in passing, it is still more uncommon, at least in my experience, to see a persistent lesion of the trigeminal nerve following cranial trauma, and, furthermore, to see the facial nerve escape altogether when the injury has been extensive enough to involve both the trigeminal and auditory.

It was for the relief of the tinnitus, which had become quite unbearable and seriously impaired the patient's health, that I was consulted, and inasmuch as there was every reason to believe that the tinnitus was not central in origin, and as the hearing was already impaired on the affected side, I had no hesitancy in recommending to the patient section of the auditory trunk. To this he readily consented, and I proceeded somewhat as follows.

Operation.—A flap was reflected so as to uncover the occipital bone to the left of the median line and below the superior curved line. That portion of the occipital bone, between the emissary sinus and the median line, and from the level of the lateral sinus downward for 3 cm., was removed with rongeur forceps. On the reflection of a dural flap, a brain retractor was introduced beneath the cerebellar hemisphere, which was gently elevated to allow of the escape of cerebrospinal fluid from the cisterna magna. At the same time I instructed my assistant to puncture the dural sac in the lumbar region, but the withdrawal of cerebrospinal fluid in this way did not allow any greater displacement of the hemisphere, which was considered possible. The latter was gently displaced backward and gradually the petrous bone was uncovered as far as the internal auditory meatus. (See Fig. 1.) With good artificial illumination, the auditory and facial nerves were identified. The auditory was readily separated from the facial nerve and divided with alligator scissors. An electrode applied to the facial nerve gave an immediate response. The dural wound was closed with interrupted silk sutures and the musculocutaneous flap restored. At no time during the operation was hemorrhage a troublesome feature; the blood-pressure varied from 110 to 140 Hg. and the pulse from 80 to 105. The patient's condition at the conclusion of the operation was entirely satisfactory, and his convalescence, though prolonged by an incidental attack of appendicitis and tonsillitis, was otherwise uneventful. (See Fig. 2.) The effects of the operation were more than gratifying to the patient, as the intense roaring sound had disappeared.

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[2] Jour. Nerv. and Ment. Dis., February, 1907, and June, 1909.

CAUTION TO OPERATORS

While I have already indicated quite specifically the conditions under which this operation may be performed with propriety, one restriction should be insisted on, namely, that the operation be entrusted only to the hands of those who are familiar with problems of the surgery of the posterior fossa. I say this with some hesitation and with due regard for the accomplishments of surgeons skilled in other fields, but I am convinced that to be able to meet the difficulties peculiar to procedures in the posterior fossa effectively and with due regard for the patient's safety, one must have made them an object of special study and have the confidence that comes only with experience. The administration of the anesthetic by intratracheal insufflation offers many advantages. The appliances for securing the proper posture of the patient are absolutely essential; the control of hemorrhage requires one to be especially resourceful; and the subsequent manipulation of the cerebellum demands nicety of judgment. The displacement of the cerebellum must be effected without undue trauma on the adjacent pons and medulla and should not be attempted without taking advantage of the additional space to be derived by evacuation of the large basal cisternae. The separation of the auditory from the facial nerve requires patience, the use of artificial illumination is almost indispensable, and the assistance to be derived from electrical stimulation should always be availed of before the auditory nerve is divided. Although the auditory nerve is larger than the facial, no chances should be taken until the facial nerve is identified by electrical stimulation. I approach these operations not without due regard for the intricacies of the problems involved, and yet if one is thoroughly familiar with them and knows how best to deal with them, no apprehension need be entertained as to the immediate outcome.

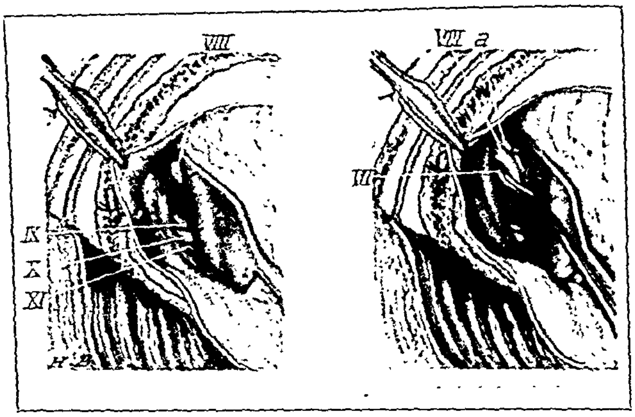


Fig. 1.—Left figure: Illustration showing the retraction of the cerebellar hemisphere and the relation of the auditory nerve at the internal auditory meatus to the glossopharyngeal, pneumogastric, and spinal accessory nerves. Note that in this illustration the facial nerve is entirely concealed by the auditory nerve. Right figure: Here the facial nerve (vii) has been separated from the auditory nerve (viii) by a blunt hook.

It is not my purpose to advocate this operation without the fullest realization of its limitations, and yet I feel quite confident that it is based on sound logical reasoning, and has been attended with a measure of relief which fully justifies its performance in properly selected cases.

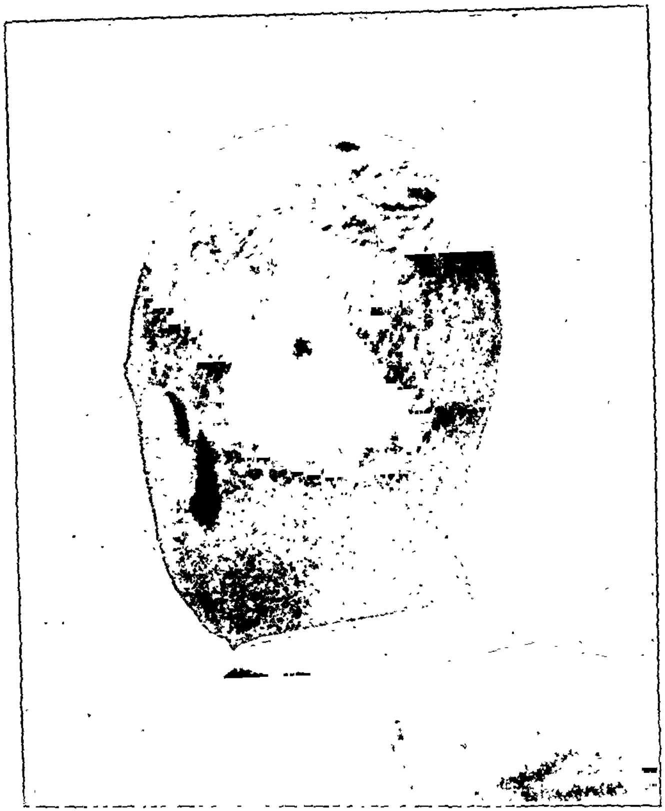
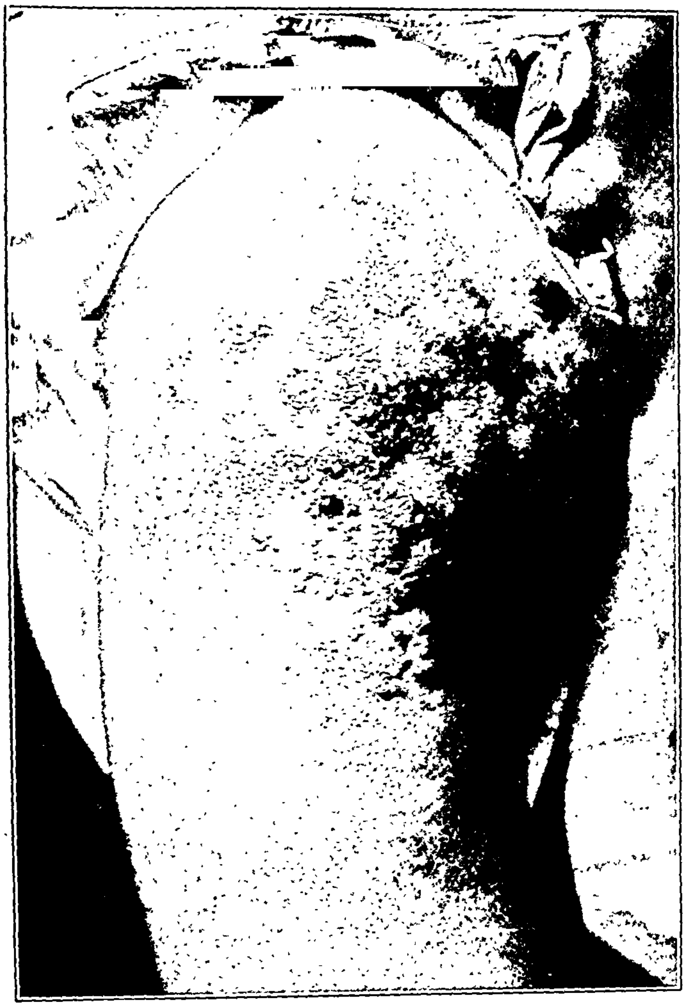


Fig. 2.—Photograph of patient taken two weeks after operation showing scar well concealed within the hair line.

1724 Spruce Street.

Morbidity in Alaska.—As a general rule there is little sickness in Alaska, for the climate is conducive to healthfulness, and, with the exception of diseases like pneumonia, rheumatism and tonsillitis, the white population is unusually healthy. The natives, however, are afflicted with many ailments, which are chiefly the result of their unhygienic living and the lack of facilities for treatment and isolation of the infected. Tuberculosis, eye affections and venereal diseases are the most important. Other conditions and diseases found among the natives were heart disease, stomach troubles, adenoids, hysteria, locomotor ataxia, pleurisy, scabies, impetigo, scrofula, rachitis, epilepsy, one case of feeble-mindedness and two of deaf-mutism. Erysipelas, small-pox, measles, infantile paralysis, chicken-pox, and influenza have occurred in epidemics. The case mortality among the natives in these epidemics has been exceedingly high. Natives living in villages adjacent to white settlements are more diseased than those living in isolated districts.—E. Krulish, *Pub. Health Rep.*

vesicles are firm, thick-walled and difficult to rupture; this is easily understood, because the disease is deep-seated, occurring in the corium, the vesicular covering consisting of the entire epidermic layer; one or two nevoid nodules are scattered through the mass of vesicles. Some areas of pigmentation can be observed.



Lesion in lymphangioma circumscriptum.

The accompanying illustration shows the lesion very clearly.

40 East Forty-First Street.

PRIMARY SARCOMA OF THE LOWER LIP *

A. J. MARKLEY, M.D.
DENVER

Considering the frequency of sarcoma about other parts of the face and the various structures of the mouth and jaws, it is rather remarkable that this form of malignancy should so rarely occur primarily on the lower lip.

There seems to be no reason why sarcoma should not grow here as well as in any other such structure, and it may of course secondarily involve the lip after arising in neighboring parts; yet with the single exception of Duplay and Reclus' "Surgery" of the edition of 1898 text-books make no mention of primary sarcoma of the lower lip, and a search of the literature reveals reports of very few cases.

Coley[1] reports a case of round-cell sarcoma of the lower lip in a girl aged 5 which recurred locally twice after operation and was then treated with mixed toxins with apparently complete cure.

Maunsell[2] reports a case of sarcoma of the lower lip in a woman aged 34 of five months' duration successfully removed. The clinical description of this case and the microscopic findings would suggest, however, rather a granuloma pyogenicum than a sarcoma, a mistake which might readily be made by one not familiar with that condition.

Langston[3] reports a case of large round-cell sarcoma of the lower lip in a middle-aged woman with certain congenital defects about the mouth which seem to indicate that the case was one of extensive lymphangioma which later became in part sarcomatous, a not infrequent occurrence.

Dr. William H. Welch, who confirmed the diagnosis of the case herein reported, says regarding it "Hemangiomas, and less frequently lymphangiomas, with sometimes sarcomatous structure, are well-recognized neoplasms of the lower lip; but pure round-cell sarcoma of the type here represented and without lymphangiectases is in my opinion very rare."

While no considerable importance is to be attached to this condition, I believe that its rarity should give to it sufficient interest to justify the report of the following additional case, for the opportunity of doing which I am indebted to Dr. J. R. Hopkins of this city, who performed the operations and kindly turned over to me the specimens.

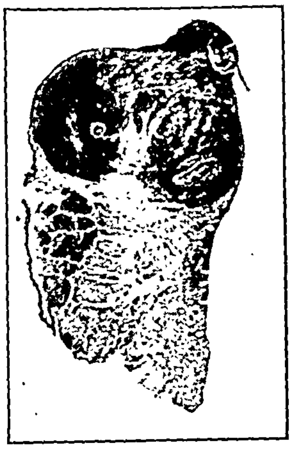


Fig. 1.—Relation of growth to structures of lip × 2.

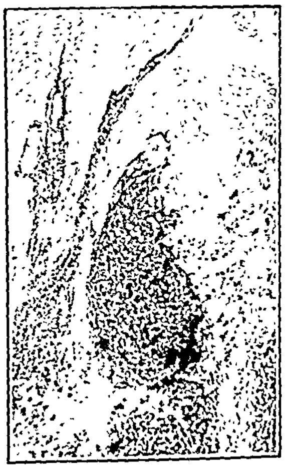


Fig. 2.—Border of growth, showing infiltration of muscle. Zeiss obj. aa, oc. 3.

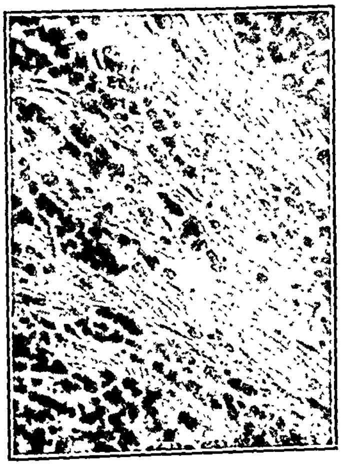


Fig. 3.—Border of growth, showing infiltration of muscle fascia. Zeiss obj. DD, oc. 1.

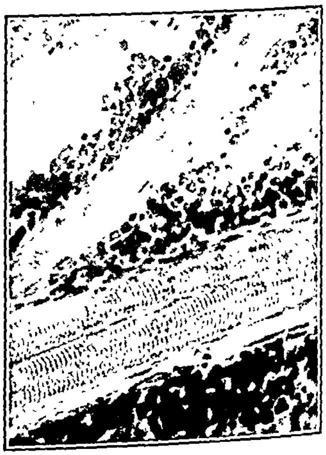


Fig. 4.—Sarcomatous infiltration of muscle. Zeiss obj. DD, oc. 1.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Coley, W. B.: Recurrent Round-Cell Sarcoma of the Lip, Post-Graduate, May, 1897.

[2] Maunsell, R. C. B.: Primary Sarcoma of the Lip, Tr. Roy. Acad. Med., Ireland, 1900.

[3] Langston, O.: Primary Sarcoma of the Lip, Indian Med. Gaz., July, 1909.

Mr. B., aged 65, came under observation in May, 1912, for an opinion as to the character of a lesion of the lower lip which was first noticed about six months previously as a small lump on the vermilion border which soon became irritated and broke down, probably from mechanical insult. Examination disclosed a flat ulceration occupying the middle third of the vermilion border, in the center of which was a projecting mass about the size of a large pea. The edges of the ulcer were neither elevated nor indurated, and showed practically a normal epithelial covering without thickening; on palpation the growth was felt to lie deeply within the body of the lip, being as apparent on the mucous as on the skin surface with definite protrusion on each surface. A group of nodules was felt in the submental region.

Although the superficial evidences of epithelioma were absent, the age of the patient, the location of the lesion and the presence of enlarged lymph-nodes in the submental region led to a diagnosis of epithelioma, and a radical operation was urged. Microscopic examination revealed not the expected epithelioma, however, but a small round-cell sarcoma. Neither the skin nor the mucosa was involved except as a result of ulceration. The projecting mass was composed only of blood and detritus. The growth occupied the body of the lip, infiltrating the muscular and fibrous structures as shown in Figures 1 to 4.

About six months after operation a nodule appeared at the anterior border of the sternomastoid muscle on the left side and was promptly removed, but unfortunately was lost without examination. Up to the present there has been no other recurrence.

On clinical evidence alone it would be extremely difficult if not impossible to make a diagnosis in such a case. A number of widely differing pathologic conditions might present such a picture, and accuracy of diagnosis in this location is of much importance, as a mistake may lead to an unnecessary mutilating operation or, on the other hand, to wholly inadequate treatment.

Darier[4] has emphasized this point in reporting a case of lymphosarcoma of the lower lip in which the clinical appearances all indicated epithelioma. Because of the frequency of epithelioma in this situation its presence will usually be assumed in cases presenting the aspects of malignancy unless appeal be made to the microscope, and since the rapid growth and tendency to wide-spread metastasis in sarcoma render early diagnosis even more important than in carcinoma, this appeal should be prompt, a biopsy being made in all such cases when the clinical manifestations are not so clear as to be unmistakable.

The involvement of the anatomically related lymph-nodes is generally regarded as definitely indicating carcinomatous disease; but Adami[5] shows that metastatic deposits in sarcoma also "may occur along the lymphatics so that malignant enlargement of superficial and other lymph-glands is not absolutely diagnostic of cancer. Borst ascribes this liability to lymphatic extension, especially to small round-cell sarcomas."

Malignant growths of the lower lip ordinarily possess such features as to place them in the domain of general surgery rather than of dermatology, yet dermatologists are keenly interested in all disease processes which involve the superficial tissues and are frequently obliged to pass judgment on those affecting the lips, among which primary sarcoma, even though it be rare, should be given consideration as a possibility.

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[4] Darier, J.: Lymphosarcoma, Ann. de dermat. et de syph., 1911, Series 5, ii, 226.

[5] Adami: Principles of Pathology, i, 701.

THE CONCEPTION OF HOMOSEXUALITY*

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Of the abnormal sexual manifestations that one encounters none, perhaps, is so enigmatical and to the average person so abhorrent as homosexuality. I have discussed this subject with many broad-minded, intelligent professional men and laymen and have been surprised to hear how utterly disgusted they become at the very mention of the name and how little they understand the whole problem. Yet I must confess that only a few years ago I entertained similar feelings and opinions regarding this subject. I can well recall my first scientific encounter with the problem, ten years ago, when I met a homosexual who was a patient in the Central Islip State Hospital. Since then I have devoted a great deal of time to the study of this complicated phenomenon, and it is therefore no wonder that my ideas have undergone a marked change. *Tout comprendre c'est tout pardonner,* I have met and studied a large number of homosexuals and have been convinced that a great injustice is done to a large class of human beings, most of whom are far from being the degenerates they are commonly believed to be.

In his "Three Contributions to the Sexual Theory," Freud introduces two terms which are very useful in discussing sexual aberrations. He calls the person from whom the sexual attraction emanates the sexual object and the action toward which the impulse strives the sexual aim. Bearing in mind these terms, we may define homosexuality or uranism as that form of sexual aberration in which the sexual object is a person of one's own sex. That is, the sexual object of the homosexual man is not a woman but a man, and the sexual object of a homosexual woman is not a man but a woman. It is for that reason that such individuals are also referred to as contrary sexuals or inverts.

Most of the investigators agree that of the sexual aberration homosexuality is by far the most wide-spread. It is very difficult, however, to give a correct estimate of the number of inverts. Many attempts have been made, notably by Magnus Hirschfeld,[1] who has had more experience with homosexuality than any other person. Hirschfeld estimates the number of male inverts of the population at about 1.5 per cent. Dr. v. Romer estimates that the city of Amsterdam contains about 1.9 per cent. inverts. Following the direction of Magnus Hirschfeld I attempted to find out the proportion of inverts in Greater New York. I invoked the aid of six cultured inverts who were strangers to one another, so that they moved in entirely different circles. They were very anxious to assist me in this work, but after about eight months' observation I found that the results differed to such an extent that it was impossible to compute any definite estimate. All that I can say is that there are many thousands of homosexuals in New York City among all classes of society. Homosexuality is not a product of big cities. When we read the works of I. Bloch, M. Hirschfeld Moll, Havelock Ellis, and others, we are soon convinced that homosexuality is ubiquitous. One finds it among primitive and enlightened races during all epochs of history

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*Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Hirschfeld, Magnus: Das Ergebnis der statistischen Untersuchungen über den Prozentsatz der Homosexuellen, Jahrb. f. sexuelle Zwischenstufen, 1904, vi, 109.

Nor is homosexuality confined to defectives, as is commonly supposed. Investigators agree that homosexuality is no sign of mental or physical degeneration. Thus Ivan Bloch[†] says: "I no longer entertain any doubt that homosexuality is compatible with perfect mental and physical health." This same author quotes Magnus Hirschfeld as saying that homosexuality may occur in persons just as healthy as normal heterosexual persons. Similar ideas are expressed by Näcke and others. My own findings concur with these views. Most of the inverts I know belong to our highest types both mentally and physically and show absolutely no hereditary taints. Without entering into a detailed discussion of this question I will say that I am convinced that homosexuality as such is entirely independent of any defective heredity or other degenerative trends.

Inverts have been variously classified by different investigators of the subject, notably by Kiernan, Lydston, Krafft-Ebing, Hirschfeld, Bloch and others, but for our purpose it will suffice to mention that there are three classes:

1. Absolute inverts whose sexual object must always be of the same sex. Most of them entertain a *horror feminae* or are impotent when it comes to the performance of the normal heterosexual act. I saw a number of patients, who were ignorant of their inversion, who first consulted a physician for psychosexual impotence.
2. Amphigenous inverts (psychosexual hermaphrodites) in whom the inversion lacks the character of exclusiveness, and hence their sexual object may belong to either sex.
3. Occasional inverts who resort to homosexuality under certain external conditions, especially in case the normal sexual object is inaccessible. Such individuals are able to obtain sexual gratification from a person of the same sex.[2]

It is interesting to note how the inverts themselves view their inversion. Some take it as a matter of course and demand the same rights as the normal. They are perfectly contented with their lot, and seldom consult a physician. "I would not for the world have anybody interfere with my personality; I just wish to consult you about a *modus vivendi* for myself," writes a young inverted clergyman on asking me for an appointment. Some, however, struggle against it and consider it a morbid manifestation. It is only the latter who can be helped by treatment.

There may be some congenital inverts, but of the forty-nine cases that I have analyzed I always discovered one or more early affective sexual impressions which favored the development of homosexuality. In others a fixation of the inversion took place earlier or later in life through external favoring and inhibitory influences, such as exclusive relations with the same sex in boarding-schools, in the army, in the navy, in prison, etc. It is no simple matter to find these early unconscious impressions. It usually takes weeks and months of psychanalysis before they can be discovered. It is therefore comprehensible why such cases have been called congenital. It is only of late that some of these cases have been studied psychanalytically by Freud, Sadger and a few others.[3] Another point against the assumption of congenitality is the fact that hypnotism and other psychotherapeutic means may cure the inversion, which is hardly possible if it were congenital. Indeed, when we examine the literature on this particular point, we find that the authors are far from being in accord on the question of whether inversions are congenital or acquired. At first it was supposed that homosexuality was simply a vice acquired through excesses or through a suggestion in early life (Binet, Schrenck-Notzing). Krafft-Ebing assumed a congenital and an acquired form. Since then there has been a tendency to limit the acquired form as evidenced in the works of Moll and others. Hirschfeld assumes that homosexuality always contains a congenital element. Näcke refuses to recognize a congenital and acquired homosexuality but suggests instead the true and false inversions. He also describes that form which manifests itself late in life as tardive homosexuality and maintains that it is not acquired but based on a congenital basis. All these diversities are, in my opinion, due to the fact that none of these authors have gone deep enough with their patients.

When we examine the theories advanced concerning the nature of inversion, we are soon confronted with the theory of hermaphroditism, which was brought into prominence by Lydston, Kiernan and Chevalier. It starts with the fact of anatomic hermaphroditism and shows that a certain degree of it really belongs to the normal. This leads to the conception of the original predisposition to bisexuality which changes in the course of development to monosexuality, leaving slight remnants of the stunted sex. This conception was then transferred to the psychic spheres and the inversion was conceived as an expression of psychic hermaphroditism. But to confirm this it would be necessary to find a regular correspondence between the inversion and the psychic and somatic signs of hermaphrodism, which was not realized. Although one frequently finds in inverts a diminution of the sexual impulse and a slight anatomic stunting of the organs, it is by no means a regular or preponderate occurrence, so that one is forced to conclude that there is no relation between homosexuality and somatic hermaphrodism.

Many observers lay a great deal of stress on the so-called secondary and tertiary sex characteristics which are supposed to occur in inverts. Thus Hirschfeld, who bases his experience on 1,500 inverts, asserts that he never saw a homosexual who did not differ from a perfect man. As much as I respect the opinion of Dr. Hirschfeld I must say that I cannot quite agree with him. In my little experience I have seen many homosexuals without any of the secondary sex characters. I will admit, however, that I have not examined my patients as carefully as Hirschfeld has his. On the other hand I know that some men show some of the secondary sex characters who are absolutely heterosexual.

The bisexual theory expounded by Ulrich—*anima muliebris in corpore virili inclusa*—is entirely untenable. The same may be said of Krafft-Ebing's theory that the bisexual predisposition gives to the individual male and female brain-cells somatic sexual organs which develop toward puberty under the influence of the independent sex glands. All that can be said is that, although a bisexual predisposition may also be presumed for the inversion, we do not know wherein it exists beyond the anatomic formations and that we are dealing with disturbances experienced by the sexual impulse during its development.[4]

According to the theory of psychic hermaphroditism the sexual object of inverts would be the reverse of the normal. Thus the invert would succumb to the charms emanating from the manly qualities of body and mind; he would feel like a woman and look for the man. This conception, although true in a great many cases, does not by any means indicate the general character of the inversion. Many homosexuals retain their virility and look for feminine psychic features in their sexual object. Freud demonstrates this nicely by mentioning the fact that masculine prostitutes in offering themselves to inverts imitate to-day, as in antiquity, the dress and the attitudes of the woman. Moreover, among the Greeks, who numbered among their inverts some of the most manly men, it was surely not the masculine traits of the boy that attracted them but rather his physical resemblance to the woman as well as his feminine psychic qualities, such as shyness and demureness. When the boy grew up he ceased to be a sexual object for men and in turn became a lover of boys. All this goes to show that the sexual object in this case, as in many others, is not of the same sex, but that it unites both sex characters. It is a compromise between the impulses striving for the man and for the woman, but firmly conditioned by the masculinity of the body (the genitals). I purposely paraphrased Freud, as these points will have to be borne in mind later.

[†] Bloch, Ivan: Das Sexualleben unserer Zeit, Marcus, Berlin, 1909, p. 543.

[2] Freud: Three Contributions to Sexual Theory, p. 2.

[3] Similar views are expressed by Coriat in his paper on Homosexuality, New York Med. Jour., March, 1913.

[4] Freud: Three Contributions to the Sexual Theory, p. 9.

The sexual aim of inverts shows no uniformity. The popular idea of homosexual relations presupposes that inverts always practice fellatio or intercourse per anum. As a matter of fact these sexual aims are least practiced. Many homosexuals are as disgusted at the mention of these practices as normals. Some content themselves with an effusion of feelings. Ten of my analyzed cases never had any sexual relations with their sexual object. Some practiced mutual masturbation, others coitus *inter femora.*

Strange as it may seem, the diagnosis of homosexuality is not always an easy matter. In the first place it must be urged that a sporadic homosexual act does not necessarily mean homosexuality, nor does the absence of such acts signify heterosexuality. There is naturally no difficulty when one is confronted with an absolute invert who acknowledges his inversion. There are, however, a number of inverts who are really ignorant of their inversion. Eleven out of my forty-nine patients did not realize that they were homosexual, although nearly all of them had had homosexual experiences some time in their lives. They sought treatment for psychosexual impotence or for some neurosis. I have also seen patients who were treated for a long time for psychosexual impotence by prostatic massage, etc., who were all the time aware of their inversion. They kept silent because the treatment gave them pleasure or because they were ashamed or afraid to tell the doctor the true state of affairs. For many reasons the average doctor is not especially affable to a homosexual patient, and many a sensitive invert has had cause to regret his confidence in the doctor.

The diagnosis should be based on the somatic and psychic elements of the case, especially the latter. Naturally the psychanalyst finds it easier to diagnose a difficult case than one who does not enter into the deeper psychologic mechanisms. Dreams are usually an excellent guide in the diagnosis of homosexuality, but it must be remembered that they should be judged by the latent and not by the manifest content by which Näcke judges them. I have analyzed many apparently sexual dreams whose latent content showed a homosexual wish.[5] We must also remember that not all erotic dreams of homosexuals are homosexual,[6] and that some apparently homosexual dreams have nothing to do with homosexuality as an inversion.[7] Furthermore, many homosexuals who are anxious to become heterosexual often show normal dreams: the dreams simply realize their wishes. I have observed this mechanism in many homosexuals, and it is for that reason that I cannot agree with Dr. Coriat, who states that the "dreams furnish us not only the best, but the *most incontrovertible*. [the italics are mine] evidence of the result of treatment." There is a class of patients who do not show the characteristics of the invert who are nevertheless constantly afraid of becoming homosexual or fear lest some one should suspect them of homosexuality. I have seen a number of such patients who were classed as homosexuals. I also saw one of these patients in consultation with Dr. Hirschfeld, who diagnosed the case as a severe psychasthenia and saw nothing homosexual in the case. If such patients are questioned, one will find that they never were in love with any person of the same sex —an important diagnostic point—and they show besides many symptoms that one does not find in the inversions. These patients may be called unconscious homosexuals, and they often develop into paranoid states, a discussion of which cannot here be entered into.[8] I may add that the patient seen with Dr. Hirschfeld is now suffering from the paranoid form of dementia praecox.

As we are dealing with a psychic manifestation, the hope for a cure of homosexuality lies in psychotherapy. I can never comprehend why physicians invariably resort to bladder washing and rectal massage when they are consulted by homosexuals, unless it be to kill the homosexual cells in the prostate so that their place may be taken by heterosexual cells, as one physician expressed himself when one of my patients asked him how massage of the prostate would cure his inversion. It is an unfortunate fact that such ridiculous ideas are often heard in the discussion of psychosexual disturbances. Only a few months ago a patient told me that he was told by two physicians that his hope for a cure lay in *castration.*

When hypnosis came into vogue a great many workers in this field utilized it in the treatment of homosexuality.[9] It was soon found that it failed to come up to expectation. Some patients could not be hypnotized, others suffered relapses, and still others did not react to the suggestions. Indeed, very few sexologists place much trust in hypnotism as a cure for inversions. Of late Moll has advanced a new psychotherapeutic method which he calls the association therapy. It consists of a methodical development of the normal and a methodical suppression of the perverse associations.[10] It is too early to speak of the merits of this treatment; so far as my knowledge goes no one has used it besides Moll. In the treatment of my cases I use exclusively psychanalysis. Freud, Sadger and others, have used this method for a number of years,[11] and the results obtained are very gratifying. Besides, psychanalysis has the advantage over the other psychotherapeutic means in so far as it enters into the deeper mechanisms of the phenomena, and, although we have not yet a full explanation of the origin of inversions, it has revealed the psychic mechanism of its genesis and has essentially enriched the problem.

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[5] Brill: Psychanalysis; Its Theories and Practical Application p. 55.

[6] Moll: Handbuch der Sexualwissenschaften, p. 654.

[7] Freud: Ueber Infantile Sexualtheorien Sammlung Kleiner Schriften zur Neurosenlehre, Zweite Folge, Deuticke, Wien.

[8] Brill: Psychanalysis; Its Theories and Practical Application, chap. VI.

[9] Compare the works of Krafft-Ebing and Schrenck-Notzing

[10] See Moll, Handbuch der Sexualwissenschaften, p 662.

[11] Freud. Three Contributions to the Sexual Theory Eine Kindheitserrinrerung des Leonardo da Vinci. Sadger: Fragment der Psychoanalyse eines Homosexuellen, Jahrbuch f. sexuelle Zwischenstufen, ix; Ein Fall von multipler Perversion mit hysterischen Abszenen, Jahrb. f. psychoanal. and psychopath. Forschungen, ii; and Ist die Konträre Sexual Empfindung heilbar? Ztschr. f. Sexualwissensch., 1908.

Those who are acquainted with the principles of psychanalysis will recall the close connection between the neuroses and the perversions. Every neurosis regularly shows some admixture of inversion, and during the analysis of a hysteria or compulsion neurosis one invariably finds some heterosexual and some homosexual roots. When we analyze a case of inversion we find that the masculine ideals of the invert regularly conceal the early infantile feminine ideals, usually the mother or foster-mother, which succumbed to repression at a very early age. Before the age of puberty the sexual feelings are usually unspecialized and the persistent desire for the man usually makes its appearance at or shortly before puberty. The lasting homosexual desire is usually brought about by the fact that the mother loses her rôle as an ideal forever, or for a long time, either through death, illness, or other estrangement. The later homosexual may then turn to his father, older brother or some other older man of his environment. Among the homosexual ideals, and besides the homosexual and heterosexual features hitherto desired, one's own person, one's own image, plays a great part; in other words, the road to homosexuality always passes over narcissism, that is, love for one's self. The stage of narcissism is characterized by the fact that the developing individual, while collecting into a unit his active auto-erotic sexual impulses in order to gain the love object, takes first himself, his own body, as the object, before going over to the object selection of a strange person. Narcissism is therefore a necessary stage of development in the transition from auto-erotism to the later love object. The love for one's own person, which only conceals the love for one's own genitals, represents a stage of development which is always present, and in a great many persons lasts a long time. The remaining road later leads to the choice of objects with similar genitals. As Sadger puts it:

> Every man usually has two primary and primitive sexual objects, and his future life depends on whether or not he finally remains fixed, and on which of the two the fixation takes place. For the man these two objects are his mother or foster-mother and his own person. To remain healthy he must rid himself of both, and not tarry too long with either of them.[12]

It is assumed that the invert could not get away from himself, that is, he was unable to free himself from the desire of requiring genitals similar to his own in the love object. He is more successful, however, in freeing himself from his mother-image which is brought about by identifying himself with her and thus taking himself as the sexual object. With the repression of the love for the mother there occurs a repression of love for all womankind. According to Sadger it follows the following trend of thought: "If the best of all women, my own mother, amounts to so little, how could any other woman stand the test?"[12] As soon as the analysis is entered on, one often finds that inverts are not at all indifferent to the charms of women, but as soon as any excitation is evoked by the woman it is at once transferred to a male object. This mechanism which gave origin to the inversion is thus repeated throughout life and their obsessive striving for the man proves to be determined by their restless flight from the woman.

It is also noteworthy that most inverts are only or favorite children. I have shown elsewhere that such children are usually overburdened with love[13] and hence remain insatiable for the rest of their lives. This accounts for the fact that when they tear themselves away from their mothers they often reject the whole sex.

These are some of the salient points brought out through the analysis of inverts which I shall illustrate by the following cases:

Case 1.—W., aged 40, single, American, was referred to me for treatment by Dr. Frederick Peterson in December, 1910. He was an absolute invert, having attempted sexual intercourse once at the suggestion of his valet and failed. He showed some of the secondary sex characters. He had a very delicate skin, of which he was proud because it was just like his mother's, a scanty growth of hair on his face, and narrow shoulders, and broad hips. Psychically he recalled an old maid. He was very neurasthenic and crabbed, but his mood often changed to a feeling of self-sacrifice and marked consideration for others. He was very artistic, loved music, pictures, and took a great interest in architecture. He had had many homosexual experiences; he was loved by and loved men, and never entertained any sexual feeling for women. As soon as I entered into his life I found that he had a striking polymorphous perverse sexuality which continued into the age of puberty. His desire for looking was especially strong. At the age of from 6 to 8 he used to lock himself in the bathroom and look at himself naked in the mirror. He often put the mirror on the floor and excited himself by looking at his penis. Although he at first recalled no heterosexual experience, he later recalled many such incidents. Thus at the age of 6, while visiting a relative, he slept with a servant who practiced masturbation with him. She also taught him sexual intercourse. Five years later at the age of 11 years he met this servant and attempted intercourse with her. At the same age he had a number of sexual experiences with a girl of 14 years. His homosexual experiences began at the age of 9 years when he was taught fellatio by a classmate He was his mother's pet. When he was young he was very much attached to her, but after the age of puberty he could never be with her without quarreling. His father he openly hated. I should like to give you a full analysis of this very interesting case, but I shall reserve this for another occasion, and will simply say that this case demonstrates with absolute certainty the psychologic mechanisms found by Freud and Sadger. After six months' treatment the patient left me perfectly cured and has remained so ever since.

Case 2.—O., 46 years old, single, American, was referred to me for treatment for psychosexual impotence by Dr. W. S. Reynolds in the beginning of May, 1909. The patient stated that he attempted intercourse at the age of 22 years and failed, and since then had been unable to get an erection without being helped by friction. For about a year before coming to me he attempted intercourse three times, for experimental reasons as he put it, and succeeded in getting only "half an erection." The patient was somewhat shy, and of the plethoric type. He gave a clear account of his life and soon became interested in the analysis. After studying him for two weeks I discovered that his impotence was due to homosexuality. His *vita sexualis* was characterized by a rather prolonged infantile sexuality. He wet the bed up to the age of 13 years. Between the ages of 6 and 8 years he practiced exhibitionism with a little girl. At the age of 12 years he began to masturbate, a practice which he continued to the time of treatment with Dr. Reynolds. He attempted heterosexual intercourse at the age of 22 years, and his first homosexual experience began at the age of 29 years and continued on and off whenever the occasion presented itself. These experiences were always accompanied by conflicts and feelings of remorse. When young he was very fond of his mother, but since the age of 8 years she had disgusted him because "she gave birth to so many children." This patient showed no secondary sex characters, although he himself thought that he did not have enough hair on his face and that his penis was small. His penis was slightly below the average. When I first discovered the patient's homosexuality I took a rather gloomy view of the prognosis. My reason for feeling so was that he entertained some vague ideas of reference. He imagined that whenever he came near men they made certain motions which meant to him that they considered him effeminate, but after ten months' treatment the patient left me cured. The analysis demonstrated almost all the homosexual mechanisms.

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[12] Sadger: Ein Fall von multipler Perversion, p. 112.

[13] Brill: The Only or Favorite Child in Adult Life, New York State Jour. Med., September, 1912; reprinted as Chapter X in Psychanalysis, Its Theories and Practical Application, Saunders Publishing Co., Philadelphia.

Case 3.—Patient, aged 28 years, single, American, actor, was referred to me by Dr. Frederick Peterson in the beginning of March, 1912. The patient was anxious to be cured of homosexuality. He himself thought that it was congenital, as he recalled that he became sexually excited at the age of 5 years on the occasion of sleeping with his father. He showed no secondary sex characters, and analysis showed that for some time before this episode there was an affective sexual experience which prepared the soil for the later development of the inversion. This case was especially interesting because besides the homosexuality the patient also evinced very strong sadistic perversions. He entertained many sadistic fancies. He longed for the days when the people went around armed with dirks and daggers, and he usually carried a revolver in his pocket. He spent considerable time in the menagerie in front of the tiger's cage. He loved to see the tiger excited and to hear him roar and he imagined that he exerted a certain influence over the tiger. The analysis brought out all the mechanisms found by Freud and Sadger in their inverts, and after six months treatment the patient was discharged as cured, and has remained perfectly normal since.

I could cite a number of other cases of the different forms of homosexuality which I have cured by psychanalysis, but, as it is impossible to give here more than a few lines of cases that would consume hours of reading, I will close my paper with the wish that it may serve to throw some light on these obscure phenomena and remove some of the prejudices to which these unfortunates are subjected.

ABSTRACT OF DISCUSSION

Dr. D'Orsay Hecht, Chicago: I should like to ask Dr. Brill whether or not he made any special inquiry into the heredity of these homosexuals. As I recall it, he stated that they did not show any particular inheritance that could be of a degenerative type. I do not ask because I question his statement, but because, after all, I think that there is always a latitude in the interpretation of what constitutes inheritance, as to whether or not a person could inherit a certain tendency not rationally acquired, but having a physical basis which would permit these sexual perversions to take root and remain for all time.

I was also impressed with the effort of Dr. Brill to correct homosexuality by decrying it. But if in the eye of the specialist homosexuality is but a contravention, socially speaking, and if it has just as much right to a hearing from the point of view of a sexual act as has heterosexuality, I really cannot see why the homosexual should care to be delivered from his homosexuality, except that he feels disgraced by it. Then again, a large number of homosexuals are in no way abhorrent of themselves in respect to their natures; they seem to be perfectly happy and perfectly well adjusted, probably in a restricted sense, and these patients probably are not worth while treating as Dr. Brill treats them. If we accept homosexuality as a condition which has as much right to exist as heterosexuality, why should we address ourselves to the duty of treating it?

I am wondering, too, whether or not the antisocial attitude toward the homosexual individual is, so far as the law is concerned, out of all proportion to the offense as it is conceived by the medical man. It is a fact that in Great Britain, for instance, the attitude on the part of the British law toward the offense of sodomy as a social crime is tremendously severe. But there must be something in homosexuality much more potential than merely the fact that the homosexuals are attracted by certain special attributes of the male, as stated by Dr. Brill; there must be something in homosexuality that far transcends what Dr. Brill conceives as homosexuality. I would ask Dr. Brill if the law takes this into consideration when it comes to the application of punishment for these offenses against society, such as, for instance, we have seen so well characterized in the celebrated case against Oscar Wilde. That, of course, was one of the most flagrant offenses of the kind, at least in the stratum of society in which it was practiced, of which we have knowledge.

Dr. Howell T. Pershing, Denver: I should like to ask Dr. Brill, when he has made the diagnosis and satisfied himself of the origin of the perversion, in what way he treats it.

Dr. Ross Moore, Los Angeles: One point that occurred to me as Dr. Brill was reading, and which was not particularly clear to me, was this: In the early part of his paper he spoke about a number of patients coming to him for some psychosis or for impotence, who did not know before they came to him that they were homosexual, and I wondered whether Dr. Brill, or any of us in carrying on such work as Dr. Brill has carried on in his cases, might not be in danger of doing society an injury as society sees the matter, or the patient an injury, by suggesting to him the possibility of homosexual conditions —whether or not it is a cure to make the man understand that he is homosexual.

I want to ask also how much of the real fundamental psychanalysis according to Croy he used in these cases. I have wondered whether or not he has modified the idea of psychanalysis, as ordinarily practiced, etc., in the handling of these cases. I should be very glad to have him tell us a little about it.

Dr. Albert E. Sterne, Indianapolis: I have found it difficult to reconcile the statement Dr. Brill has made, that these individuals were not mentally or physically in any sense alienated from that which is commonly regarded as normal, with the impression which I gained that there is a distinct abnormality presented by the individuals in the three cases reported in detail. It is very hard to reconcile oneself to experiences in conditions of this kind and not recognize certain collateral conditions that have been manifested by these individuals; in other words, to look on this homosexuality as an isolated phenomenon. We are not accustomed, of course, to regard this abnormality as a manifestation of a mental condition, while we do regard it as a marked evidence of degeneracy. This subject has, of course, considerable ethical importance.

It is hard for me again to realize, not only from the paper that Dr. Brill has given us, but also in personal conversations with him, how he can feel satisfied, and how he can convince others, that these individuals are absolutely cured. He simply takes the statement of the patient that he no longer indulges in the practice that he had earlier acknowledged. That may be convincing to Dr. Brill, but it is pretty difficult at a distance to be convinced.

Dr. A. A. Brill, New York: In some cases I found no hereditary factors. I did not go into any theories at all, but based conclusions on the results of mental examination of average patients. Most of these patients recover, though they are content to remain homosexual. Those who wish to get well are young adults if they are mentally normal. I tell them that it will take them a long time to recover, and that if they will leave the matter entirely to me I will start treatment; otherwise I will not start treatment.

The only way I could answer Dr. Pershing's question would be to give him the analysis of a typical case. But this would be impossible considering that I spend an hour with the patient six times a week for six months.

With reference to the question of determining that a person is homosexual:

A patient came to me who was said to have nothing the matter with his sexual life, but who had convulsions. I had seen him not more than three times when I said to him, "You are homosexual," and I explained what I meant. He told me that while at college he never indulged in sexual acts, and that for this reason he used to wrestle, during which he would have ejaculation, and he selected his partners. Unquestionably from the beginning of his existence he was homosexual, although he was able to have sexual intercourse with his wife, but he was compelled to marry when quite young; he was "prodded into it," as he said. He came to me to be treated for neurosis, but the neurosis was simply the result of homosexual lack of gratification.

We should be particularly careful *not to suggest anything*. I never tell a patient at once that he is homosexual. Be reasonably sure that he is homosexual and you need not then hesitate to tell him so.

Answering Dr. Sterne's question as to how I can determine that the patient is cured:

A patient who comes to me and tells me, for example, that he will commit suicide if he cannot be relieved of his terrible condition. When that patient suddenly changes and falls in love with a woman and marries her, I can see no reason to doubt that he is cured when he never had any such feeling before. Moreover, the man does not come to me at my solicitation. He comes to me with something definite; I follow the case for months or perhaps more than a year; I know him better than any one else in the world, and he has no reason to lie.

Those men are, as a rule, no different from a crowd of heterosexuals, and, further, they belong to some of the finest types. Those are the only cases that I have analyzed, and I believe that only persons of a high type should be analyzed, for those are the ones we should reclaim. We cannot accomplish anything satisfactory in the case of ignorant persons.

DIURETICS IN CARDIAC DISEASE

A GENERAL REVIEW *

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In considering the subject of diuretics in cardiac disease it is essential that we frame in our minds some tentative idea of the forms of cardiac disease in which it is desirable to resort to diuretics at all; secondly, that we form a clear idea of the manner in which the lesion of the heart affects the action of the kidney; and thirdly, that we consider the mode of action by virtue of which the particular diuretic drugs under consideration may be expected to remedy these disturbed conditions.

With full realization that I am making rough and arbitrary divisions, I may say that one might consider the advisability of resorting to diuretic measures in five forms of disease of the circulation: (1) infective endocarditis; (2) arteriosclerosis with periodic attacks of the various disturbances associated with localized arteriosclerosis, vertigo, headaches, transitory cardiac asthma or pulmonary edema, angina pectoris and vasomotor crises; (3) chronic or paroxysmal hypertension without edema; (4) acute cardiac overstrain, and (5) broken systemic compensation with chronic passive congestion, and edema with or without general anasarca, ascites, hydrothorax or hydropericardium, arising from myocardial weakness, valvular insufficiency or adherent pericardium.

In acute and chronic infective endocarditis one encounters, it is true, a scanty urine with albumin and red blood-cells just as in passive congestion; but as Baehr[1] has shown, this is due to the presence of a true infective glomerulonephritis with emboli of *Streptococcus viridans* in the loops of capillaries in the glomeruli, and it should accordingly be treated as a primary nephritis rather than as a primary heart disease. I shall therefore leave this question to be discussed by Dr. Christian.

In the groups of arteriosclerosis and of chronic hypertension one might well be tempted to resort to diuretics to remove products of auto-intoxication or to relieve a possible plethora, but in either case it would be questionable whether or not such an effect could be secured or would be desirable. It is useless to try to lower the blood-pressure by removing water from the blood by diuresis, because that water is immediately replaced from the tissues, and in some cases diuretics may even drive an excess of water from the tissues into the blood (Weber[2]). In both of these conditions, as von Noorden[3] has shown, it is better to spare the arteries and kidneys from overwork by light diet and restriction of salt and water than to remove these substances from the system with diuretics.

In acute cardiac overstrain, on the other hand, such as we meet in athletes after a boat race, a football game or a tug of war, or in the less romantic walks of life in persons who have performed feats of strength or exertion involving hard lifting, pushing or pulling, one is often confronted by a scanty urine containing albumin, casts and even red blood-cells (A. R. B. Myers,[4] da Costa,[5] Meylan[6]). This is due entirely to the congestion of the kidney resulting from venous stasis during the overstrain, and is therefore of primary cardiac origin; but, as these writers have shown, it is of entirely transitory duration and clears up when the strain is over and the heart once more under normal conditions. From a very complete study of the history of many decades of Harvard oarsmen, moreover, Meylan has shown that neither the heart nor the kidney shows signs of damage in after years, and the condition therefore can be left to take care of itself without the intervention of diuretic measures.

The chief condition in which active intervention to induce diuresis is advisable is in broken systemic compensation with edema from stasis in the systemic veins either from failure of the right ventricle, tricuspid stenosis or adherent pericardium (especially Pick's pericarditic pseudocirrhosis). In all cases of passive congestion the changes in the circulation closely simulate those observed in asphyxia, and Cohnheim and Roy[7] have shown that in the kidney the first effect of asphyxia is a constriction of the renal vessels and diminution or cessation of flow of urine. This constriction has its origin in the vasomotor center and is absent if the nerves to the kidney are cut or become paralyzed, under which condition the volume of the kidney and the amount of blood flowing through it follow and are determined by the general blood-pressure. Prolonged stasis gives rise here as elsewhere to cloudy swelling of the kidney-cells of both the tubules and glomerular capsule, and to swelling of the tissues, which tend still further to choke the circulation through the renal vessels (Fischer[8]), leading in vicious circle to still more degeneration of the renal epithelium and glomeruli and finally to the proliferation of connective tissue which results in the formation of the typical hard red kidney of chronic passive congestion (*Stauungsniere*, Senator,[9] Aschoff[10]) whether it be of the large or small and contracted type.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association at the Sixty-Fourth Annual Session, held at Minneapolis, June, 191[illegible]

[1] Baehr, G.: Glomerular Lesions of Subacute Bacterial Endocarditis, Am. Jour. Med. Sc., 1912, cxliv, 327.

[2] Weber, S.: Ueber die Beeinflussung der Resorption durch Diuretica, Verhandl. d. Kong. f. inn. Med., 1906, xxiii, 518.

[3] Von Noorden: Clinical Treatise on Disease of Metabolism, 1903.

[4] Myers, A. R. B.: Etiology and Prevalence of Diseases of the Heart Among Soldiers, London, 1870.

[5] da Costa, J. M.: On the Irritable Heart: a Clinical Study of a Form of Functional Cardiac Diseases and Its Consequences, Am. Jour. Med. Sc., 1871, lxi, 17.

[6] Meylan, G. L.: Harvard University Oarsmen, Harvard Grad. Mag., 1904, xii, 362, 543.

[7] Cohnheim, J., and Roy, C. S.: Untersuchungen über di Circulation in der Niere, Virchows Arch. f. path. Anat., 1883, xcii, 424.

The functional power of the kidney in passive congestion has recently been subjected to a very careful clinical and experimental study by Rowntree, Fitz and Geraghty,[11] testing the function of the glomeruli by Schlayer's[12] lactose test (duration of excretion of 2 gm. of lactose in 20 c.c. of water introduced intravenously) and the activity of the tubules by the excretion of salt, potassium iodid and phenolsulphonephthalein (method of Rowntree and Geraghty). They found that in cardiac decompensation the amount of urine may vary and is no absolute index of the functional power of the kidney, although it is diminished in grades of stasis, but that the ability to excrete salt may be diminished in stasis of moderate grade even before a diminished excretion of phenolsulphonephthalein gives evidence of wide-spread damage to the tubules. Lactose, the index of glomerular function, is always delayed. Nonnenbruch[13] in a less complete study also finds that in chronic passive congestion there is evidence of both vascular and tubular injury.

As regards the general edema which accompanies passive congestion Widal and Javal,[14] Strauss[15] and Magnus-Levy[16] have shown that it is associated with retention of sodium chlorid by the tissues, and Loeb[17] and Fischer[8] have demonstrated that the edema itself is determined more by the local formation of acid products which cause the tissue to take water by imbibition than by the changes in the walls of the vessels.

Fischer believes that the same laws of colloid imbibition govern both retention and excretion of water by the kidney, and hence believes that administration of alkalies, by antagonizing the effects of local acid products, gives a therapy applicable to both the edema and the renal conditions.

We owe our knowledge of the most important of cardiac diuretic drugs, the foxglove or digitalis, to an old woman in Shropshire who as Withering[18] (1785) tells us "had sometimes made cures after the more regular practitioners failed"; and since William Withering, according to his own words, was "open to information regardless of the source from whence it springs," he investigated this drug and "soon found the foxglove to be a powerful diuretic" so that he came "to use it in ascites, anasarca and hydrops pectoris, and as far as the removal of the water will contribute to cure the patient, so far may be expected of the medicine." Indeed, the excellent results which that old physician obtained in over a hundred cases justified his optimism. Digitalis is the diuretic of choice in all cardiac conditions with failure of the circulation because it combines in a most fortunate way all the modes of action that are desirable in counteracting the condition. As Traube[19] and Lauder Brunton[20] have shown, it increases the force of the heart-beat, the blood-pressure and as a rule the velocity of blood-flow, and also causes a constriction of the blood-vessels of the skin and intestines. But the experiments of Brunton and Power and of Gottlieb and Magnus[21] demonstrate that the renal vessels do not take part in this constriction due to digitalis, but that on the contrary more blood flows through the kidney than before. All the experimenters from Withering to the present have found that digitalis acts as a diuretic in normal kidneys even when it causes no change in blood-pressure; but in these cases it acts both by dilating the renal vessels and by some specific action on the renal epithelium. Cushny[22] has called attention to the fact that all purgatives have also some diuretic action by giving rise to what he terms "diarrhea of the tubules," and since even before Withering digitalis was known as a purgative drug, it is natural that it also should have some specific action on the renal epithelium, though this is not nearly as marked as with drugs of the purin group.

On the other hand, most of the effect of digitalis depends on its action on the circulation, the velocity of blood-flow and the pulse-pressure. Since Rowntree and Fitz have shown that in chronic passive congestion the power of the kidney to excrete lactose is diminished, and since Schlayer has shown that the lactose excretion may be taken as an index of the ability of the kidney vessels to react, it is evident that in passive congestion the activity of the kidney must depend more on the condition of the general circulation than does the normal kidney. Now Erlanger and Hooker[23] have shown that, other things being equal, there is a close parallelism between the amount of urine excreted and the pulse-pressure or the amount of change of blood-pressure with each heart-beat (that is, the difference between maximal and minimal blood-pressure), and on the other hand that in orthostatic albuminuria the albumin is excreted only when the pulse-pressure is low or falling. Gesell[24] has shown that this diuresis depends directly on the pulse-pressure because he has been able to produce it in excised kidneys by increasing the pulse-pressure without permitting any change in the amount of blood flowing through the kidney. The pulsation of the blood-stream is communicated as far as the glomeruli, for Nussbaum[25] has been able to watch these structures pulsate in the frog, and it is therefore likely that the pulsation bears a definite relation to filtration in the glomeruli where, on account of the size of the arteries leading to the tuft, pulsation must be much more marked than along the tubules. Now, as stated before, one of the well-marked effects of digitalis is to increase both the systolic output of the heart and the pulse-pressure, and therefore to increase filtration through the glomeruli and bring on diuresis. This is by far the most marked in cases of cardiac irregularity and especially in patients with auricular fibrillation. In these cases before the administration of digitalis the pulse-rate is fast, the beats are small and the pulse-pressure is very small, so that oliguria is the rule. Digitalis blocks off many of the impulses from reaching the ventricles, and slows the latter so that large slow beats with large pulse-pressure result bringing with them the optimum conditions for renal secretion, and within twenty-four hours the urine may be increased fivefold or tenfold.

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[10] Aschoff, L.: Lehrbuch der Pathologischen Anatomie, Jena, 1909, ii.

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[17] Loeb, J.: Physiolo[illegible] über Ionenwirkungen, Arch. f. d. ges. Physiol., 1898, lxxi, 468.

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[22] Cushny, A. R.: Diuresis of Renal Cells, Jour. Physiol., 1901-1902, xxvii, 429.

In using digitalis it is important, as Pratt[26] and Hale[27] have insisted, to obtain a preparation which has been standardized physiologically, so that one can be certain that he is giving an adequate amount of the drug; but whether one use the galenical tincture or the fluidextract or the powder of a good digitalis leaf or resort to one of the special preparations of digitalis bodies, either the digitalin, digalen, digitaline-Nativelle (which is digitoxin), or the digitonin-free digitalis (digipuratum) does not seem to make any essential difference. There is a wide-spread clinical teaching that the infusion of digitalis is preferable, as a diuretic, to the tincture; but most of the evidence is based on studies made before digitalis preparations were standardized. The infusion probably contains more digitonin than the other preparations, but I have thus far found no evidence which is conclusive to me that a good infusion is more efficacious than an equally good tincture or one of the active digitalis bodies, whereas on the other hand infusions are much more subject to variation and to spoiling.

Among the other bodies of the digitalis group I can bear witness to the excellent effects first noted by Fraenkel for the administration of from 0.5 to 1 mg. strophantin into either the veins or muscles. Its diuretic effect seems to run parallel to the effect on the circulation.

When we come to the other members of the digitalis group, squill, convallaria, adonis vernalis, hellebore and erythrophloeum, however, a question arises, not of their absolute efficacy, but of whether or not any of them are as efficacious as digitalis or strophanthin as diuretics from quickening of the entire blood-flow through the body; or, on the other hand, as efficacious as are the diuretics of the purin group in their action. The experience of decades has shown that squill is an excellent diuretic, especially when given with digitalis, but the careful critical tests of Mackenzie[28] show that when periods of squill administration alternate with periods of digitalis administration in the same patient there is no preponderance of evidence in favor of the superiority of squill.

On the other hand, when we desire a more powerful diuresis than is afforded by digitalis we make use of the diuretics of the purin or caffein group—caffein, theobromin, theophyllin or theocin—which as Loewi[29] has shown act both by dilating the renal vessels and by direct action on the renal epithelium.

According to the studies of Loewi[29] and his collaborators the drugs of this series act largely through bringing on dilatation of the renal vessels, although he has demonstrated that they may also act directly on the renal epithelium when dilatation of the vessels is prevented. Observations by Meyer in diabetes insipidus corroborate this view. The caffein series is particularly efficacious in those cases of cardiac dropsy in which the kidney cells have not yet become greatly damaged, and one will often encounter cases in which these drugs will bring on a diuresis not obtainable by the digitalis series. Of the caffein group theobromin is a more potent diuretic than caffein (caffein citrate) itself; and theophyllin, an isomer of theobromin, is still more potent than theobromin. The most convenient form of all is the water-soluble acet-theocin sodium in doses of about 3 grains (0.2 gm.) three times a day; it not only gives greater diuresis but may also cause diuresis in cases in which theobromin sodium salicylate evoked no response whatever. Erich Meyer[30] calls attention to the fact that in cases of primary cardiac disease one obtains an intense diuresis with great benefit to the patient from drugs of the caffein series, in contrast to the cases of primary nephritis, in which he has never seen any recognizable benefit from their use. Indeed, the recent studies of Schlayer, Mosenthal, Christian and Janeway indicates that when there is sufficient damage to the kidney these diuretics soon fatigue the latter, cease to produce a response, and then actually diminish rather than increase renal secretion. On the other hand, one does encounter cases of long-standing heart-failure in which the administration of these diuretics does not produce a diuresis, or in which, quite comparable to Schlayer's experience in primary nephritis, the first doses are followed by increased output of urine but subsequent doses are not. This is not surprising since Schlayer, Rowntree and Fitz, and Nonnenbruch have shown that in these cases there is a secondary diminution in renal function of both tubules and glomeruli and definite injury of the tissue. Fortunately, Rowntree has provided us in the phenolsulphonephthalein test with a simple, quick and easy method of determining in any given case the exact extent to which the renal epithelium is injured. If we make a phthalein test as soon as we see the patient, we can tell in two hours whether his renal epithelium is working well or is out of function.[31]

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[23] Erlanger, J., and Hooker, D. R.: An Experimental Study of Blood-Pressure and Pulse-Pressure in Man, Johns Hopkins Hosp. Rep., 1904, xii, 145. Hooker, D. R.: A Study of the Isolated Kidney: the Influence of Pulse-Pressure on Renal Function, Am. Jour. Physiol., 1910, xxvii, 24; Postural or Orthostatic Albuminuria, Arch. Int. Med., May, 1910, p. 491. Hooker, D. R., Hegeman, R. F., and Zartman, L. V.: The Relation of Pulse-Pressure to the Appearance of Albumin in a Case of Orthostatic Albuminuria, Am. Jour. Physiol., 1908-1909, xxiii, p. 11.

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[26] Pratt, J. H.: The Potency of Digitalis Preparations, Boston Med. and Surg. Jour., 1910, clxiii, 279.

[27] Hale, W.: Digitalis Standardization and the Variability of Crude and Medicinal Preparations, Bull. 47, Hyg. Lab., U. S. P. H. S., Washington, 1911.

[28] Mackenzie, J.: Digitalis, Heart, 1910-1911, ii, 273. Cushny, A. R.: On the Action of the Digitalis Series on the Circulation in Mammals, Jour. Exper. Med., 1897, ii, 233.

[29] Fletcher, W. M., Henderson, V. E., and Loewi, O.: Mitteilungen über den Mechanismus der Diurese, Arch. f. exper. Path. u. Pharmakol., 1905, liii, 15. Alcock, N. H., and Loewi, O.: Ueber den Mechanismus der Salzdiurese, ibid., 1905, liii, 33. Henderson, V. E., and Loewi, O.: Ueber den Mechanismus des Harnstoffdiurese, ibid., 1905, liii, 49; also Ueber die Wirkung der Vasodilatatorenreizung, ibid., 1905, liii, 56.

[30] Meyer, E.: Beitrag zur Wirkungsweise einiger gebräuchlicher Diuretika, Therap. Monatsh., 1911, xxv, 11.

If the phthalein excretion is low—30 per cent. or less in two hours—we can know at once that we are somewhere near the point at which theocin might injure the renal epithelium; and it will be better to rely on the digitalis and try to improve the circulation before trying to stimulate the kidney. If the general circulation improves, as Rowntree and Geraghty and also Erich Meyer have shown, the function of the renal epithelium will return very rapidly to nearly normal and then one need not be afraid of acting on it with these powerful diuretics. Therefore, we should aim first to improve the circulation with digitalis and leave the removal of the edema for the administration of caffein diuretics a few days later.

The same precautions apply to the saline diuretics, potassium acetate, citrate and tartrate, although they are probably less irritant to the kidney than are the caffein series, and their effect also is limited by the same conditions. Unfortunately, this is true also of Martin Fischer's method of administering salt and sodium carbonate intravenously or by rectum, for Fischer states specifically that "when a heart drops below the lowest level of efficiency and has no recuperative powers left in it, alkali and salt cannot supply them." On the other hand, when the circulation is improving, the acetates, citrates and tartrates which are transformed into carbonate in the body and are excreted as such are much easier and more pleasant to the patient than the carbonate.

One of the oldest drugs that has been used in failure of the circulation is calomel, and with many excellent physicians it is a routine to prescribe purgation with calomel as soon as they see a patient with heart-failure. Frequently, however, one finds a copious secretion of urine occurring even before the bowels have moved and at least soon afterward. Flechseder[32] has shown, however, that most of the excess of water that is thus excreted through the kidneys is first exuded into the upper bowel and is then reabsorbed as pure water by the lower bowel and excreted as such through the kidneys, and he finds that the diuresis from calomel is greatly increased if the outflow from the lower bowel is hindered by administration of morphin. The good effects of calomel in cardiac disease is testified to by its long empirical use, particularly in the form of the pill of Addison and Niemeyer (digitalis 1 grain, squill 1 grain and calomel 1/8 grain). Calomel acts particularly on the tubules, and tends to increase the excretion of sodium chlorid more than the total volume of urine, so that as Meyer has shown, the amount of salt excreted may be raised to six or seven times the former level. It is of course beneficial to deplete the tissues not only of water but also of this excess of sodium; but it must never be forgotten that calomel acts on the kidney by being converted into mercuric chlorid and that any excess may give rise to a bichlorid nephritis which affects chiefly the tubules (Richter, Schlayer). It is particularly dangerous, therefore, in cases in which the renal epithelium is already badly damaged, and the precaution of a phthalein test is therefore doubly advisable. On the other hand, it is probable that the pendulum has swung a little too far toward the side of fear and that in the great majority of cases of decompensation the kidney is not injured enough to be sensitive to a single dose of calomel, especially if no morphin has been given to prevent the normal purgation.

It must also be borne in mind that a number of purely physical procedures may influence the excretory power of the kidney. The pressure within the abdomen from ascites may be so great as to compress the renal vein and cause a congestion oliguria which may subside as soon as the ascitic fluid is removed by paracentesis; the emptying of distended bowels may allow the heart to lie in a better position and enable it to exert more efficient contractions so that the circulation becomes improved, spasm of the kidney vessels passes off, swelling of the renal tissue may subside and restitution of renal function thus set in. So also after the tapping of a hydrothorax or the performance of a venesection; and, indeed, after venesection we have an added acceleration of the blood-stream through the kidneys on account of a decrease in blood viscosity. Hot packs or poultices over the kidneys and abdomen and irrigation of the bowel with liquid at a temperature of from 102 to 105 F. may also cause further dilatation of the kidney vessels from heat alone and thus bring on diuresis.

Since Schlayer has shown us that the kidney fatigues just like the heart it is important in the more severe stages of combined heart and kidney failure to apply to both the principle of rest. This is best exemplified in the Karell[33] diet—giving the patient nothing but from 600 to 800 c.c. (from 20 to 25 ounces) of milk daily until he has begun to improve. During the stage of edema it is also important to limit the ingestion of salt unless one is definitely following the method of Fischer; for, as Rowntree and Fitz have shown, the power to excrete salt may be diminished very early in the stage of congestion. The failing kidneys may also be spared further work if the excess of fluid from the body be removed by a not too vigorous purgation or by mechanical means, either by incisions in the skin or better by puncturing the latter with Southey or Curschmann tubes and allowing the power of a siphon tube down to the level of the floor to add itself to the elastic exudation from the tissues.

In general we should aim first to know the exact state of the kidneys; second, to improve the circulation with digitalis or to spare it with the Karell diet; and, thirdly, to resort to theocin or the saline diuretics to relieve edema if the renal epithelium is not severely injured.[34]

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[31] I should like to call the attention of those who may consider a phthalein test a difficult or expensive procedure to the fact that a simple home-made colorimeter can readily be constructed which is accurate to less than 3 per cent. and is very easy to use. A description of this colorimeter will be published soon.

[32] Flechseder: Quoted from Meyer and Gottlieb.

[33] Karell, T.: Arch. gén. de méd., quoted from von Wittich: Ueber den Werth der Karellkur zur Behandlung von Kreislaufstörungen, Deutsch. Arch. f. klin. Med., 1913, cx, 128.

[34] In addition to the references given in the text, the following will be found of interest:

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ABSTRACT OF DISCUSSION

Dr. Philip S. Roy, Washington, D. C.: Bleeding is one of the most important therapeutic agents in cardiovascular dropsies, in cases in which we want to increase the action of the kidneys. About six months ago I had a man who was eliminating one pint of urine in twenty-four hours. After bleeding a pint the kidneys eliminated two gallons in forty-eight hours. He was taking no drug at that time. Digitalis, of course, acts best in pulsus irregularis perpetuus or fibrillation of the auricle. Mr. Sawyer always gives digitalis when the veins are too full and the arteries not full enough; in other words when the right side of the heart is overtaxed. I have followed Mr. Sawyer's advice in the last few years with good results. I know Dr. Hirschfelder intended to mention rest along with diet in the treatment of diseases of the heart. Rest, digitalis and diet are the three cardinal therapeutic agents in treating diseases of the cardiovascular system, but as I have mentioned, blood-letting will often produce diuresis when other agents have failed.

Dr. B. Fantus, Chicago: I wonder whether Dr. Hirschfelder purposely omitted reference to the production of hyperemia of the back by means of heat, as by poultices, or of chemical irritants, as by mustard applications, or of suction, as by means of dry cups. It is true that the experimental basis of these procedures is still insufficient. Whether hyperemia of the back produces anemia or hyperemia of the kidney is still one of the mooted questions so far as I know. But that it is well-founded clinically I believe some of the practitioners present will agree.

Dr. Frank Billings, Chicago: I should have liked to hear Dr. Hirschfelder say more about the management of this condition without drugs. My own experience is that, in decompensation of the heart with anasarca, with that condition of the kidney of a cyanotic type in which the circulation through the kidney is very small in a given time, to begin with the use of digitalis practically results in failure. Preliminary to the use of the drug must come absolute rest and reduction of fluid intake for any given time to relieve the patient of much of his dropsy. Reduction of the fluid intake may be secured by giving milk alone not to exceed a liter in twenty-four hours or even less, or absolute starvation with water alone. This treatment should be accompanied by excretion through the bowel by free purgation. It is a matter of choice as to what one will use as the cathartic. The objection made by some that the use of salines in these cases may cause the accumulation of more salines in the body that are harmful I think a point well taken, but in that case even one has at hand plenty of other vegetable cathartics. The too early use of heart tonics of the digitalis group with the heart doing all it can may be harmful to the heart fighting against an obstruction it cannot overcome.

Dr. Robert A. Hatcher, New York: It has long been held that the tincture of digitalis and the infusion have different actions, but no one seems to have tested the matter experimentally. The marc left after making the tincture is inert, hence the tincture must be supposed to contain all of the active principles of the leaf. Different substances have been called "digitonin" by different observers, leading to a good deal of confusion with regard to that substance. Digitalis leaf contains only traces of the saponin, digitonin, a matter to which I wish to call attention because of the false claims which have been made with reference to preparations of digitalis alleged to be free from digitonin.

Dr. A. D. Hirschfelder, Baltimore: For renal hyperemia I mentioned merely hot applications both to the back and to the abdominal wall, which certainly brings about by the heat minor and reflex vasodilatation to the kidney, which I believe is most important. I think that it is quite probable that the very hot rectal infusions that Dr. Martin Fischer recommends in his rectal infusion method of carbonate and chlorid may, by their proximity at least to the left kidney, give rise to a reflex dilatation in those kidneys in which an element of force may be spasm, which was demonstrated by Roy, Cohnheim, Thacher and others as playing a rôle. My general ideas about the management of a case of cardiac failing compensation with edema which demand cardiac measures closely coincide to those of Dr. Billings, but one must avoid too free purgation, for instance, fifteen bowel movements daily, as was in vogue some years ago, especially in those cases of aortic insufficiency which are affected by temporary, sudden rises in blood-pressure. Dr. Dandy has demonstrated that in the act of defecation the blood may jump 50 mm. of mercury. In failing aortic insufficiency this may account for some of the sudden deaths at stool. In aiming at drug effects we fire our therapeutics in a volley; we ought in a dangerous case to do as rapidly as possible all that we can at once. In dealing with a dilated heart each measure which tends to relieve the dilatation will tend to place that heart under the mechanical conditions in which it contracts most efficiently and we want to get the overstretched fibers down to the length at which they contract under the conditions of greatest degree of mechanical efficiency by rest, venesection, purgation and digitalis or more probably an intravenous or an intramuscular injection of strophanthin. I cannot say that in my own experience the prompt administration of strophanthin, followed in the next twenty-four hours by digitalis has been, as Dr. Billings suggests, a detrimental procedure. I can well understand that if it were the only procedure used this might be true, but I am not quite clear in my mind as to just what dangers Dr. Billings fears from doing venesection first and then following the temporary, but definite relief of dilatation with immediate injection intravenously of strophanthin. It has seemed to me, both from clinical and experimental work, that it is important to improve the tonus of the heart muscle as well as its power of contraction as quickly as possible. The dilatation depends on a lowered tonicity and increased venous pressure. Digitalis and strophanthin increase tonus and antagonize a high blood-pressure and venesection lowers blood-pressure; then why are not two measures taken together better than one alone?

Dr. Frank Billings, Chicago: I probably did not make myself clear. You answered my question yourself when you said that you would relieve the venous stasis first. In my own experience I would feel that I could give the digitalis with the best results after the venous engorgement was partially or wholly relieved.

Dr. Hirschfelder, Baltimore: The action of digitalis on a heart in that condition may perhaps be different from the action on a perfectly healthy heart and I do not know that any experiments in pathologic pharmacology have been made which would throw light on that important question. I think we shall have to take Dr. Billings' experience in this matter into consideration in contrast to experiments done on healthy heart-muscles.

Dr. Ray L. Wilbur, San Francisco: My idea in asking for the papers of this clinical symposium was to get something of an authoritative summary in regard to the treatment of such conditions. When I thought of the barrels of ergot injected into tuberculous patients with hemorrhage and of the hogsheads of sweet spirits of nitre given patients with cardiac lesions I thought it would be well to have some authoritative statements so that we could get a fresh start.

THE SIGNIFICANCE OF PLASMA CELLS IN THE TONSIL

A PRELIMINARY REPORT *

J. GORDON WILSON, M.A., M.B.
CHICAGO

In an article published last year,[1] I emphasized the significance of what I called the hyperfunctionating tonsil in childhood. I there said:

> "Mere fluctuation in size of a tonsil in a child ought not to be regarded as a sign of local disease and an indication for enucleation. Many children are constitutionally subject to such fluctuations and the treatment is general more than local." "It is common knowledge that in systemic diseases we have such enlargements and few of us are disposed to argue that these are a sign of focal disease. I would rather regard them as indications of functional activity." Speaking with reference to the region where the respiratory and alimentary tracts meet, I said: "As knowledge advances there is constantly impressed on us the important and unexpected relation of this region to disease. We err if we forget that here as elsewhere the essential resisting power to infection lies in the tissue cells. Further, we shall add to this error if we concentrate our attention too much on leukocyte invasion or exudation to explain initial protection. Whenever from unhygienic surroundings or mode of life, it may be also from constitutional weakness, these tracts are exposed to influences which lower their vitality, the tonsils suffer for them and with them. When the mucous surfaces, particularly absorbent in the child, are exposed to irritation, the tonsil again suffers for them and with them. It seems to me the tonsils in a child protect these tracts especially where they come together in the nasopharynx, and are associated directly with their well-being. If this be so, I am called on to do everything to protect these bodies during the period of functional activity."

An article by Dr. D. J. Davis, which has had considerable influence on the question of the function of tonsils and on the importance of tonsillar disease in systemic affections appeared recently.[2]

In order to make Dr. Davis' opinion clear I quote at some length from his article. He says:

> "In all tonsils from individuals who are more than a few weeks old plasma cells are found in abundance. They occur under the epithelium, especially that lining the crypts, along the connective tissue bundles and about the blood-vessels. In the hypertrophied tonsils they are much more numerous. Their significance is not entirely understood, but inasmuch as they are more or less characteristic of chronic inflammatory processes they probably indicate a chronic infection of the tonsillar crypts or the absorption of toxic substances therefrom." In another part of the same article he says: "In view of the fact that plasma cells occur in such large numbers in tonsils, appendix and some other tissues after birth at a time when the crypts and intestinal canal are infected, and associating this with the fact that in chronic infections generally the plasma cell is so constantly found, one is led to suggest that their presence in the tonsil and appendix, and also in the gastro-intestinal tract, lymph glands and spleen is due to a chronic infectious or absorptive process."

The suggestion of Dantchakow and Pirone, that the absorption of ferments may cause sufficient irritation to promote the accumulation of plasma cells, is passed over by Dr. Davis with the following remark:

> "In the case of the tonsil, the view is more rational that this organ is in all cases, whether hypertrophied or not, a chronically infected focus shortly after birth, a view apparently supported by bacteriologic studies. It therefore seems reasonable that cells more or less characteristic of chronic inflammation should accumulate here. Not only the nature of these cells, but their accumulation in such large numbers and in localities immediately underneath the epithelium, especially about the infected crypts, also favors such a view."

The views here expressed by so competent an observer as Dr. Davis appeared to me to be somewhat at variance with what I had written. I determined, therefore, to further inquire into this aspect of the subject. I was further impelled to do so since, if his conclusions be correct and the opinion here expressed of the significance of plasma cells in the tonsil be true, we seem driven to the conclusion that the supporters of complete enucleation of the tonsil under all conditions have proved their contention that the tonsil is from the earliest stages of life a diseased organ which it is our duty to remove. The conclusions that may be drawn are perhaps wider than Dr. Davis himself will admit. For it appears to me we must further admit that the tonsils and the appendix are vestigial structures. So far as the appendix is concerned we need not here concern ourselves except to note that competent anatomists and physiologists and some very excellent surgeons are not so sure as they were a few years ago that it is a vestigial organ. We are however concerned with the tonsil; and again I reiterate what I have already frequently declared, that neither embryology nor comparative anatomy nor yet physiology gives any support to such an hypothesis. The opinion that they are vestigial in man and even worse than useless has done considerable damage and created prejudice against much endeavor to discover their nature and function.

Every one is becoming more and more convinced of the great importance of the lymphatics and of the adenoid tissue of the pharynx. But the opinions held of the rôle they play in regard to absorption of micro-organisms and toxins is very divergent, though the current view would appear to condemn the large masses of adenoid tissue, root and branch. Though much work is being done much more requires to be done before we can have any but the haziest ideas about their significance. If we start any scientific investigation bearing on this question with a false assumption in regard to tonsils and adenoid tissue generally, our results must come out hopelessly astray. It is well, therefore, that we pause at times to examine the basis for our theories.

Plasma cells occur mostly after birth in blood-forming organs.[3] They arise under certain conditions from two allied groups of cells, lymphoblasts and lymphocytes, and are best designated as lymphoblastic or lymphocytic plasma cells. It is of the utmost importance to remember the relation of the lymphoblasts to the lymphocytes. These cells differ morphologically only in size.[4] Lymphoblasts are cells of the size of myelocytes which possess a weak basophil protoplasm. The fairly large, somewhat irregular nucleus shows a relatively thick cell membrane and strongly colored nuclear granules. Close to the nucleus, usually to one side, there is in the protoplasm a small clear halo which represents the position of the red granules of the Altmann-Schridde stain. The lymphoblasts, according to Aschoff, are a division stage of the lymphocyte and may show mitosis. From them arise lymphocytes, small cells with a round chromatin-

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* Read before the American Laryngological Association, May, 1913.

[1] Wilson, J. Gordon: The Tonsils in Childhood, Am. Jour. Dis. Child., May, 1912, p. 277.

[2] Davis, D. J.: Plasma Cells in the Tonsils, Jour. Infect. Dis., March, 1912, pp. 146 and 158.

[3] Maximoff: Folia Haemat., 1907, iv, 625.

[4] Aschoff: Pathologische Anatomie, ii, 102.

rich nucleus which usually lodge nuclear bodies which stain strongly. Also around these there is the clear halo comparable to that of the lymphoblasts.

The lymphoblastic plasma cells are less frequently observed than the lymphocytic plasma cells. The former possess the typical lymphoblast nucleus but the protoplasm is more strongly basophil and the halo is larger. The lymphocyte plasma cell has a pronounced nucleus which lies at one end of an almost oval cell. The halo and Altmann-Schridde granules are found in both.

The Unna-Pappenheim pyronin-methylgreen stain, which I have chiefly used, stains the cytoplasm red and the nucleus blue-green; the characteristic features of the plasma cells are the eccentrically placed "wheel" nucleus, and the small clear halo around it. It is called a wheel nucleus because chromatin usually radiates centripetally. Plasma cells may show mitosis as well as two or three nuclei.[5]

Plasma cells are acknowledged to be derived from lymphocytes by irritative processes. In artificially produced inflammation due to toxins, plasma cells appear in great abundance and certain toxins have a special tendency to produce them. They are found in the vicinity of sterile foreign bodies; for example, sterile sponges. Their abundance in chronic infectious processes has made such processes a favorite locus for the study of plasma cells. From this has developed the predominating idea that these cells must be necessarily connected with inflammatory processes.

One great objection that can be raised in regard to many of the investigations into their function is that they have in the main been studied in pathologic tissues and so have come to be regarded more from their pathologic than their physiologic side. Hence has come the undue emphasis which has been placed on their degenerative characteristics. Unna and many pathologists regard them entirely as degenerated cells. It would appear, however, from further investigations that this is too narrow a view, and a view which in the tonsil will be fraught with unfortunate consequences.

It is well recognized that plasma cells occur in all subacute and chronic infectious diseases; but it is not so often remembered that they are also found in organs which we are justified in believing are normal, of course never in such abundance. Thus plasma cells are found in man and other mammals in the hematopoietic and lymphatic systems and in the digestive tract with its associated glands. Professor Schaffer[6] gives a list of various organs in which plasma cells are normally found. He sums up as follows:

> "In short, wherever lymphocytes are, plasma cells can be met with. It is especially to be noted that in many of these places in particular physiologic conditions (digestion, pregnancy), the number of plasma cells can be increased enormously."

There are many facts which compel us to recognize that they are engaged in many normal activities. Thus they appear to be necessary to the discharge of such physiologic activities as *digestion* and of repair. Pirone[7] demonstrated during digestion a marked increase of plasma cells in the intestine and spleen. This was confirmed by the observation of Joannovics[8] that dogs seven hours after a test meal showed in the intestinal mucosa and submucosa enormous numbers of plasma cells, which lie partly scattered throughout the tissues and partly gathered into clumps. Here they may often be seen with many nuclei quite similar to giant cells. The increase of plasma cells in the spleen during digestion is mostly in the pulp and here they are plentifully found. Very interesting is the interpretation of Dantchakow[9] who concluded from the results of her experiments that there is a connection between glandular activity and plasma cell formation. She attributes to them the function of taking up and carrying away materials elaborated by secretion.

When we compare the results of these experiments with the examination of plasma cells both in normal and pathologic conditions, and when we find that they are found physiologically in the lymphatic tissues and also in the digestive tract with its related glands, the suspicion is immediately awakened that probably the cause of plasma cell production may be referred to some irritant resulting from glandular activity or from the action of ferment as well as from cell degeneration and increased protoplasm destruction. In agreement with this view we have the experiments of Foa who produced abundant plasma cell formation by injecting organ macerations and by inserting foreign muscle tissue. The irritative action of such ferment-like products will explain not only the appearance of plasma cells normally during digestion and in atrophic processes but also the physiologic appearance during involution of the thymus and as a sign of senescence of bone-marrow.

What appears to me to be a clear conception of their function was enunciated by Loewitz[10] who declares that he could not regard the plasma cells as degenerated elements, for when they finally degenerated this followed after the exercise of a certain function. He believed that not only could their formation be caused by ferments but that they are themselves necessary to produce ferments and so are actively engaged in the digestion of albuminous bodies. This is well in keeping with the view of Schaffer[6] who says, "Die Funktion der Plasmazellen besteht in der Fortschaffung und Nutzbarmachung zerfaltenden Zellmaterials." Joannovics in concluding an exhaustive article on this subject declares that in all likelihood they partly represent specific transformed elements with less functionating power. Sooner or later they perish by vacuolization, liquefaction or hyaline degeneration with pyknosis of the nuclei. In regard to their origin the active cause seems to be the irritative action of a hypothetical ferment-like substance produced by secretory glandular activity, by atrophic conditions and by the disintegration of cellular elements.

We are here chiefly concerned with the significance of plasma cells in adenoid tissue. This tissue has of course been chiefly studied in the follicles of lymph-nodes, where as has been said plasma cells are normally present in considerable numbers. As is well known adenoid tissue is the seat of the exchange of materials between the blood and the lymph. It has been shown that the lymph contains specific substances that do not exist in arterial and venous blood. Many of the katabolic products poured out of the tissues into the lymph-stream if directly reabsorbed into the blood would exercise a toxic action. These products are rendered innocuous and even beneficial to the organism by the specific activity of the lymph-nodes through which they pass before reentering the blood.[11] They are there destroyed and modified in the adenoid tissue. It would appear therefore that adenoid tissue has a more important function than that of filters to arrest or retard the entrance into the blood of mechanical impurities, be they particles of dust or pathogenic organisms. One of their physiologic functions is to destroy the toxins of tissue metabolism.

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[5] Pappenheim, Folia Haemat., 1907, iv, 208.

[6] Schaffer: Centralbl. f. allg. Path. u. path. Anat., 1909, xx, 1010.

[7] Pirone: Folia Haemat., 1909, vii, 342.

[8] Joannovics: Centralbl. f. allg. Path. u. path. Anat., 1909, xx, 1022

[9] Joannovics: Centralbl. f. allg. Path. u. path. Anat., 1909, xx, 1021.

[10] Loewitz: Centralbl. f. allg. Path. u. path. Anat., xx, 1030.

What part the lymphocyte and its derivative the plasma cell takes in this function we do not know. We do know that as the toxins increase—so also do these cells. Luciani believes that the destruction is a direct consequence of the metabolism of the lymphocytes accumulated there in large quantities. The results of various investigators support the view that the lymphocytes are actively engaged and that in the battle plasma cell formation occurs and as a sequence many plasma cells degenerate. In the tonsil plasma cells are normally present, but their presence is no more an indication of chronic local disease than their presence in lymph-nodes. On the other hand it would be a sign of disease or at any rate of a non-functionating organ were they absent.

The tonsils I am here concerned with have been hypertrophic and have been obtained from children and young adults. In all the adenoid tissue was abundant and both lymphocytes and plasma cells were in excess. In many cases increase of the plasma cells was out of all proportion to the increase of lymphocytes. This increase indicated that the lymphocytes are here more actively engaged and that some injurious body is present in excess. Does this local increase in number of plasma cells give any indication as to the source of the irritant? We may presume that the irritant may come from the crypts or through the lymph-channels; may come from focal disease or from some distant katabolic process.

In most of the specimens of hypertrophied tonsils plasma cells are more abundant near the crypts. But they are not confined to the subepithelial region bounding the crypts. They can be found in the follicle, in the connective tissue between the follicles and in the deeper parts of the tonsil. Davis says that he has been unable to find plasma cells in the follicles.

I cannot agree with this. Both in the center and toward the periphery of the follicle I have seen typical plasma cells in addition to the larger cells which Schridde has called lymphoblastic plasma cells. In what appeared macroscopically to be a perfectly normal tonsil of a monkey, plasma cells were more abundant in the deeper part of the tonsil both in the follicle and connective tissue. In some tonsils the plasma cells adjoining the crypts appear to be more abundant where Stohr's phenomenon is taking place. From the sections I have examined there is evidence that certainly not all of the irritants that stimulated the plasma cell formation have entered from the crypts. There is evidence that irritants may come through the lymph-stream from extratonsillar areas. But it matters not how or from where the irritant comes the plasma cells are there to meet it. In the tonsil the plasma cells indicate not so much a diseased organ as an organ that is reacting to disease. Their localization indicates not only that there is absorption of toxins from the crypts but that there are toxins coming from other sources. Their early occurrence is no argument for early removal but rather for the putting right of any faulty metabolism which has caused their increase. It calls for less concentration and thought on a narrow field but a wider range of view. By doing so we shall have advanced preventive medicine and added to the well-being of our patients.

The presence of plasma cells, *instead of showing that* the tonsil ought thereby to be regarded as a source of danger, would rather indicate an organ which is striving to preserve the body from disease. Their presence in excess certainly indicates that something is wrong, but not necessarily in the organ itself. The tonsil is diseased, not because plasma cells are present, but because they are no longer able to cope with the toxins pouring in.

The important function of the tonsils is to protect the body from poisons absorbed from the pharynx; probably also as Metchnikoff[12] believes to pour into the pharynx large numbers of lymphocytes which act as defenses against organisms in the pharynx. If they are diseased and non-functionating they are worse than useless because they allow the passage of these poisons. I can well imagine that their removal may cause the lymph-stream to be diverted to more active and better functionating tissue.

Of course we have diseased tonsils just as we have diseased lymph-nodes. Of course we have to enucleate tonsils just as we have to enucleate lymph-nodes. I am not advocating the preservation of a diseased organ. I am pleading for a scientific basis for our knowledge when the tonsil is diseased. I am pleading for a recognition of its function and a more just conception of how a faulty metabolism here—from its size, its position and its anatomic structure—must have a far-reaching effect. The duty of the laryngologist is not that of a mechanic to remove the diseased organ. He should strive to prevent the organ from becoming diseased; he should be prepared to correct the faulty metabolism which may have led to the disease. The objection to specialism—that its view of disease is too circumscribed—can well be urged in regard to our attitude in tonsillar treatment.

In conclusion I would sum up my position thus: Plasma cells are derived from lymphocytes and are engaged in removing and utilizing cell material which has broken down. If it be pathologic to destroy albuminous bodies and toxins arising from katabolic processes—and possibly also of bacterial origin—then plasma cells are pathologic. They are not degenerated cells but cells actively engaged in combating the toxins which pass through adenoid tissue. Their presence instead of showing that the tonsil is diseased indicates that it is functionally active. Their presence in excess shows that we have some focus of disease but not necessarily a local one.

104 South Michigan Avenue.

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[11] Luciani: Physiology, translated by Welby, London, 1911, I, 534.

[12] Metchnikoff: Immunity in Infective Diseases, p. 429.

Beware of Conclusions Drawn from Picked Cases.—I need hardly warn you against being misled by those who choose particular instances to prove their arguments. . . . You may have heard the story of the philosopher who was taken to see the temple of Neptune. Around the walls were the pictures of those who had made dangerous voyages in ships, like those of St. Paul, and naturally they were glad whenever they touched land again, and their votive offerings were hung in the *temple of* Neptune. The philosopher was asked to gaze on the pictures and acknowledge the goodness of the sea-god, the preserver of the givers. But he said, "Now show me the pictures of those who went to sea and did not come back." So when wonderful cures are told. ask about those who were not cured.—C. B. Lockwood in *Clin. Jour.*

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SATURDAY, AUGUST 2, 1913

THE CHANGING THEORIES OF DIABETES

The treatment of diabetes in recent years has been kept in close harmony with the prevailing theory of the immediate cause of its symptoms. It is agreed among all who have first-hand knowledge of the disease that the glycosuria is due to an overloading of the blood with sugar. As we have previously pointed out,[1] the hyperglycemia is the uppermost fact which establishes the abnormal metabolism of diabetes. How the overloading of the organism with sugar comes about is, of course, a fundamental question. The practice in the direction of restricting the intake of carbohydrate has been based on the belief in the inability of the diabetic organism to use sugar in the normal manner; and there is no dearth of evidence to support the current assumption. Of late, however, another theory has begun to be spread about in this country; and since it bears the advocacy of one of the best-known investigators and writers on the subject, von Noorden of Vienna, it is certain to find a favorably disposed audience. The view is now promulgated that the hyperglycemia of diabetes does not arise from a disturbance in the power of the organism to destroy sugar, but rather to the overproduction of sugar. We are told that there exists an abnormally increased "mobilization" of sugar, whether from glycogen or from some other substance, together with an increased production of sugar from other sources—proteins and perhaps fat.

The logic of such a situation, if it were correctly presented in these views of von Noorden, Kraus and their followers, would be to call seriously into question the appropriateness of the "strict" carbohydrate-free diet which is now so successfully employed in many cases. The aim of this mode of dietotherapy is, of course, to spare a disturbed function from undue activity and give an opportunity for partial physiologic recuperation. Even von Noorden, however, is not ready to give up the tried and tested method of limiting carbohydrate ingestion. He therefore invents the ingenious hypothesis that sugar is one of the foremost stimulants to the mobilization process—hence the caution to be exercised in its use. The purveyors of certain types of diabetic foods, notably the objectionable so-called "gluten" flours, have been quick to see the loophole in the argument through which they can admit the alleged justification for not making their products strictly carbohydrate-free.

Graham Lusk has called the attention of American readers to the vigorous protest which has been raised against the "newer opinions" by Minkowski,[2] himself a preeminent investigator in this field and widely known for his classic work on experimental pancreatic diabetes. He points out very properly that the newly heralded hypothesis of an undisturbed utilization of sugar is not in accord with the opinions of recent years in relation to diabetic acidosis—with the claims that the appearance of acetone, diacetic acid, and beta-oxybutyric acid is caused by insufficient combustion of carbohydrate. There is a grave danger that the "carbohydrate" treatments of diabetes—with oatmeal, potato, etc.—which are admittedly not without some inexplicable merit in selected cases, may gain a vogue out of all proportion to the claims which their empirical use at present can justify. Minkowski remarks that perhaps the greatest value of the oatmeal and similar treatments lies in the fact that through them the importance of reducing the protein in the diet has become known to many physicians.

The amino-acids derived from proteins can unquestionably give rise to sugar. We believe, however, that the assumption of the production of sugar from fat in diabetes is untenable and undemonstrated. In these fundamental facts lies the oft-repeated cue to proper treatment. In the great majority of cases we entirely agree with Minkowski that the most desirable treatment consists, first, in a reduction of the carbohydrate; second, in a compensatory increase in the fat ration; third, in a moderation of protein intake, and fourth, in caution against muscular overexertion. These are the dicta taught by theory and carefully controlled experience alike. "Theoretical ideas," says Minkowski, "give us a viewpoint from which to survey our experience in practice. Each change of viewpoint allows new phases to come to the front and retires those from our vision which formerly had seemed most important in our eyes." It behooves us to proceed cautiously and with due critique in the abandonment of an old theory or the substitution of a new one, lest we hastily introduce into therapy some new fashion that does not deserve to enjoy popularity.

THE OXYGEN CONTENT OF THE BLOOD IN LOBAR PNEUMONIA

Butterfield and Peabody[1] found that when pneumococci are grown (outside of the body) in blood or in solutions of hemoglobin, there results a lowering in the power to combine with oxygen due apparently to the formation of methemoglobin.

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[1] The Sugar Content of Human Blood, editorial The Journal A. M. A., April 19, 1913, p. 1228.

[2] Minkowski, O.: The Newer Opinions Concerning Diabetes Mellitus, Translated by Graham Lusk, Med. Rec., Feb. 1, 1913.

[1] Butterfield and Peabody: The Action of the Pneumococcus on Blood, Jour. Exper. Med., 1913, xvii, 587.

Following up these results, Peabody[2] injected rabbits with very large doses of pneumococci so as to produce a rapid and intense bacteriemia. During the course of this infection he found the oxygen-combining power of the blood to fall progressively until death took place, and at the same time an even more marked fall in the content of oxygen of the arterial blood. These changes in the blood, which are quite analogous to those that occur when the pneumococcus is grown on blood in the test-tube, were found to be due to the change of hemoglobin into methemoglobin.

Peabody[3] now undertook to study the oxygen content of the blood in lobar pneumonia, in which one naturally would expect disturbances in gas exchange because of the involvement of the lungs and, in view of the results of the experiments just mentioned, changes in the hemoglobin molecule also. Peabody finds, from a thorough study of the blood in twenty-five cases of lobar pneumonia, that in uncomplicated cases the oxygen content of the blood as a rule remains within normal limits. Here the decrease in the respiratory surface is compensated for fully, but occasionally (as seen by Peabody in two cases) the oxygen may be lower and the carbon dioxid higher than normal, indicating an interference with the respiratory exchange of gases. In the terminal stages of fatal cases there occurs frequently a progressive diminution in oxygen content in the blood associated with a simultaneous loss in power to combine with oxygen. Peabody found these changes in cases of profound pneumococcemia, and they no doubt depend on the formation of methemoglobin as observed in the test-tube experiments and in rabbit pneumococcemia. It is altogether reasonable to regard this change in the hemoglobin molecule, by virtue of which it no longer readily takes up and gives off oxygen, as a factor of importance in the causation of death in many cases of pneumonia. The results of these studies form a distinct addition to our knowledge of the changes that may occur in pneumococcus infection.

THE PREVENTION OF TUBERCULOUS MENINGITIS

Recently the clinical and other features of tuberculous meningitis, including the preexistent conditions in the body and also other factors bearing on the development of this fatal and dreaded form of tuberculosis, have been studied anew in a very thorough manner by Herbert Koch on the basis of material in von Pirquet's clinic for diseases of children in the University of Vienna.[1] Because of the importance of the problems involved, it may be worth while to review briefly Koch's observations on the conditions under which the disease develops. These observations include 306 cases occurring during the years 1903 to 1911.

The disease affected the two sexes in nearly equal proportions. Any definite indications that family predisposition or heredity plays a dominant rôle were not obtained. Of the acute infectious diseases, measles and then whooping-cough seemed to have favored the development of tuberculous meningitis—measles to a much larger extent than whooping-cough. In a few cases trauma appeared to have excited the outbreak. Clinically demonstrable tuberculosis elsewhere was observed in forty-nine cases, and in practically all cases that were examined thoroughly after death an active primary focus with corresponding invasion of the lymph-nodes was found in the lungs. A definite primary intestinal focus was not observed. Koch's studies warrant the conclusion that tuberculous meningitis does not develop from a focus of tuberculosis that has become calcified.

It is significant that most cases occur during the months from January to June. This might be interpreted as the result of the depressing influences of the winter months and of the confinement indoors during that time. A prominent feature of tuberculous meningitis is the frequency with which it occurs in early childhood. In this respect Koch's figures confirm in a striking manner previous observations. Thus 68 per cent. of his cases occurred in the first quadrennial period and only 3.7 per cent. in the quadrennium ending at the age of 14. Of one hundred cases in children reports of which were collected by Still, thirteen occurred in the first year, seventy from the second to the fifth, and seventeen from the fifth to the tenth. When one considers that tuberculous infection is many times more common in the latter part of childhood than in the earlier, this predilection of tuberculous meningitis for the first four or five years of life becomes still more striking. According to Monti and Hamburger the percentage of tuberculosis in the first four years of life in Vienna is 15, while in the years from 11 to 14 it is 94. From these figures and his own results with respect to the frequency of tuberculous meningitis in different periods of childhood (years 0 to 14), Koch calculates that in the tuberculous, acute meningeal tuberculosis is 116 times more frequent in the first four years than in the last four years of childhood. The largest number of cases by far occur in the second year. How is this explained? Now tuberculous infection is much more common in the second year than in the first, but the relative percentage of deaths from tuberculous meningitis is greater in the second year than in the first; this is true even in larger measure of the third year. Without attempting to discuss the complex underlying conditions, we may say then that tuberculous meningitis does not acquire such dominance in the final stage of tuberculosis in the first as in the immediately succeeding years.

Three facts of special significance emerge from this review, namely, the predisposing influence of measles and of the winter and spring months on the development of tuberculous meningitis and, thirdly, the predilection of this manifestation of tuberculosis for the early years of childhood. At present prevention is our only weapon against tuberculous meningitis. There is no cure. The facts mentioned teach us the necessity of lessening as much as possible the opportunities for tuberculous infection of young children and of increasing their resistance; secondly, the importance of protection from measles, and, thirdly, the value of doing what can be done by means of good food and fresh air to keep up the general health and vigor during the cold months especially. Finally, we come to the great question how to increase directly the resistance of children to tuberculous infection so that they can withstand better the tendency of the bacilli to the overwhelming infection of which tuberculous meningitis is a manifestation. Will protective inoculation do it?

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[2] Peabody: The Oxygen Content of the Blood in Rabbits Infected with Pneumococcus, Jour. Exper. Med., 1913, xviii, 1.

[3] Peabody: The Oxygen Content of the Blood in Lobar Pneumonia, Jour. Exper. Med., 1913, xviii, 7.

[1] Koch, Herbert: Ueber Meningitis tuberculosa, Ztschr. f. Kinderheilk., 1913, vi, 263; Entstehungsbedingungen der Meningitis tuberculosa, ibid., v, 355.

COLD AND BACTERIA

That cold greatly retards the action of micro-organisms and inhibits their multiplication is a familiar fact which finds numerous applications in the household and industrial practices of every-day life. Further than this, moreover, there is a widely disseminated belief that a freezing temperature not only checks the development of bacteria but also actually reduces their number. The destruction of these lower forms of life by the action of cold is evidenced in numerous experimental researches in which bacterial counts have been made after exposure of the mediums containing them to freezing temperatures or lower; and the belief that the number of bacteria may be lessened by such conditions is supported by the fact that ice, and especially old ice, even when formed from polluted sources, is very low in bacterial life.

Dr. Keith of the Massachusetts Institute of Technology has pointed out certain apparent contradictions between fact and theory in relation to the effect of cold on microbial forms.[1] Various frozen foods, such as ice-cream, frozen meat and frozen milk, even when kept for a long time, often contain large numbers of living bacteria. This fact has become particularly conspicuous in the case of frozen eggs, which have been the source of considerable controversy among food authorities and commercial interests in the past year. Even after exposure of many months to a temperature as low as 0 F., such eggs may still contain millions of bacteria. It is evident, therefore, that low temperatures alone do not destroy bacteria.

The investigations which Dr. Keith has undertaken to clear up these apparent discrepancies point to a clear-cut explanation. When bacteria like the *Bacillus coli* are frozen in water as solid ice and held at —20 C. (—4 F.), only a small number remain alive at the end of a few days, and storage of a few weeks results in complete destruction. When the same organisms are frozen in water not solidly, but as a water-ice or sherbet is frozen, and are held in this condition at —20 C., a large percentage remain alive for many months. When the organisms are frozen in pure or diluted milk the death-rate increases with the dilution, the largest numbers surviving in the undiluted milk. It seems likely, therefore, as Keith suggests, that water-bearing food materials freeze in such a way that most of the bacteria present are extruded from the water crystals with the other non-aqueous matters (including air), and lie among these without being crushed or otherwise injured; while in more purely watery suspensions, and above all in water itself, in which the whole mass becomes solidly crystalline, the bacteria have no similar refuge. They are perhaps caught and ultimately mechanically destroyed between the growing crystals. This theory, then, would explain the absence of live bacteria in clear ice, their comparative abundance in "snow" ice and "bubbly" ice, and also the fact that the more aqueous food materials when frozen contain the fewest, and the least watery the most, living bacteria.

If the foregoing contentions are valid, frozen food-materials may be assumed to favor the continued existence of bacteria at low temperatures, not because the ice-cream, eggs or milk contribute nutrient material, but apparently because they furnish physical conditions somehow protective of the bacteria.

UNRECOGNIZED INTERRELATIONS BETWEEN THE INTESTINES AND THE STOMACH

In searching for the cause of certain types of intestinal digestive disorders it is common to look to gastric disturbances as the primary source of the difficulty. There are, for example, familiar forms of intestinal dyspepsias (so-called) which are known to attend conditions of achylia or gastric hypacidity. The failure of the ingested food to receive a suitable preliminary treatment in the stomach, coupled with the lack of sufficient secreted hydrochloric acid to exert the usual wholesome antiseptic action on the micro-organisms that tend to get a start in the upper reservoir of the alimentary tract, spells trouble for the subsequent course of the food. Pronounced putrefaction in the intestine, and attendant diarrheas are common clinical manifestations of the situation just described.

How about the reverse conditions? Can an "upset" in the intestinal processes become the primary source of disorder, rather than the sequence of a disturbed gastric digestion? Can the functions of the stomach be impaired as the result of abnormal digestive conditions which have developed first in the succeeding portions of the alimentary tract? Experiments conducted in Cohnheim's laboratory at Heidelberg have offered some trenchant suggestions in reply to such questions. By making use of animals with fistulas surgically established at various regions of the gastro-intestinal tract it has been possible to initiate pathologic disturbances in appropriately selected regions and to note the behavior of other portions of the digestive tube in respect to motility or secretory power. The technic whereby so-called polyfistula animals have been prepared — animals with fistulas of the stomach, duodenum, ileum, etc., simultaneously established — has given a great impetus to the study of alimentary physiology, precisely as has the introduction of the method of observation by the Roentgen rays. It has been shown in suitable subjects that when normal products of gastric digestion are introduced into the small intestine, a normal sequence of events ensues in the stomach in respect to the secretion of gastric juice and the discharge of its contents. When, however, disturbances liable to occur in everyday human experiences are imitated — when partly fermented and putrid food mixtures are introduced directly into the intestine, the subsequent response of the gastric functions is surprisingly altered.[1] A great delay in the discharge of test-meal contents from the stomach may now occur. Mixtures which ordinarily leave the stomach in half an hour when "normal" contents are present in the bowel below, may be delayed in their discharge as much as two hours. The usual secretory behavior of the stomach may also be altered decidedly. Here, then, are illustrations of the interference with the normal behavior of a healthy stomach by the initiation of fermentative conditions in another part of the alimentary tract. Were a gastro-enterologist to examine the stomach at such periods by the usual functional tests he would be more than likely to note abnormality of the gastric activities without discovering that the primary cause was situated in a more remote region of the digestive tube. In other words, these animal experiments teach us to keep in mind the possibility of gastric symptoms which are purely secondary to fermentative disturbances in the bowel, upsets of the sort all too familiar as intestinal fermentative dyspepsias and characterized in particular by the imperfect digestion of starch. As the German investigator has expressed it, we are dealing with "enterogenous" gastric disturbances.

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[1] Keith, S. C., Jr.: Factors Influencing the Survival of Bacteria at Temperatures in the Vicinity of the Freezing-Point of Water, Science, June 6, 1913, p. 877.

Incidentally we may refer to other observations which emphasize the reverse interrelation of stomach and intestines under conditions that are strictly normal rather than pathologic. It has been noted[2] that cane-sugar, a common component of the daily diet, is without immediate influence on the stomach in respect to secretion or motility; but when sugar is present in abundance in the intestine it may delay the discharge of contents from the stomach. This is due to the fact that sugar with its tendency to retain water for its solution delays or prolongs the absorption of other substances from the bowel. The action of hydrochloric acid, with its well-known influence of inhibiting the opening of the pylorus when it is present on the duodenal side of the sphincter, is thereby prolonged. From the facts cited, Thomsen has evolved some considerations in respect to our dietary habits. He remarks that the meal is frequently concluded with sweets or pastry which readily yields sugar. It is suggested that this is the outcome of an instinctive desire to delay the ultimate emptying of the stomach as long as possible. An empty stomach furnishes the opportunity for the sensation of hunger. The presence of sugar late in the meal, we are now led to believe, insures a longer period of gastric digestion because of the indirect influence which it exerts from the intestine prior to its final absorption. Can it be that herein lies a real reason for the sweetmeats with which a course meal is so frequently concluded?

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[1] Baumstark, R.: Ueber Hervorrufung von Magenstörungen vom Darm aus, Ztschr. f. physiol. Chem., 1913, lxxxiv, 437.

[2] Thomsen, E.: Ueber die Einwirkung des Zuckers auf die Verdauung, Ztschr. f. physiol. Chem., 1913, lxxxiv, 425

Current Comment

OVERLOOKING THE FIRST ESSENTIAL

New medical practice acts have recently been secured in Arizona and California. Like that secured a year or two ago by Washington, these provide for different forms of certificates for physicians, for osteopaths and for "other systems of healing," and likewise provide a different educational standard for each. While physicians are required to have completed a course of at least four years in a medical school holding the requirement of the Association of American Medical Colleges, an osteopath is not required to have had any fixed amount of preliminary education and needs to have completed only two or three courses in an osteopathic college, while practitioners of "other systems of healing" need only to present a diploma from any school of no specified standards or length of time. This is a distinct discrimination against the physicians and allows illiterate and untrained "doctors" to practice the healing art. How long are our legislatures going to overlook the fact that the first essential in the practice of medicine is the diagnosis, no matter what "system" or method of "treatment" is to be employed? Can they not see that unless the "doctor" knows what disorder he is attempting to alleviate, any "treatment" is mere guesswork and as apt to do harm as good? The practice of medicine is not the giving or the withholding of drugs but the art of using for the alleviation of disease whatever form of treatment that disease demands. To apply this treatment the doctor must first know what disease he has to treat. It is clear, therefore, that all who attempt to treat human ailments should have a training in the fundamental medical science. The "healer" as well as the physician needs to be educated sufficiently well not only so that he may be able to recognize disease but also so that all the modern methods of treatment may be at his disposal and that he may select the form most likely to result in a cure. With the inferior training now legally permitted by the practice acts of the states named, how is the "healer" to know whether drugs should be given or withheld? With his inferior training how is he to know whether his own peculiar method of treatment is the best one to be used or whether it is the very form which should be avoided? How long is the art of healing—the true practice of medicine—going to be so misinterpreted? Just so long will the true physicians be unfairly discriminated against; just so long will education and training be placed at a discount and just so long will a sick and helpless humanity be unprotected from the ignorant and from that class of impostors who are always ready to take advantage of loopholes in laws which are intended to be a safeguard against them! Let there be one educational standard fixed with which every practitioner of the healing art is required to comply. Then let him use whatever treatment his educated judgment may indicate.

POWER OF A CITY TO DEMAND PURE MILK

The right of a city to demand the tuberculin testing of cows from which its milk-supply comes, and to establish such other regulations as will insure that the identity of the source of the milk may be known, has been upheld by the highest court. In the medicolegal department of this issue we print an abstract of the Supreme Court decision sustaining the Milwaukee milk ordinance. The Supreme Court holds with the state court that the ordinance is not discriminatory, that it is a reasonable requirement, and that the court cannot question the purpose and the necessity for it. The police power of the state must be declared adequate to such a desired purpose; and the city ordinance, in the section providing for the destruction of milk not conforming to its requirements, is not an arbitrary and unreasonable deprivation of property in a wholesome food, but a regulation having the purpose of and found to be necessary for the protection of the public health.

TYPHOID IN AUSTRALASIA

It is not alone in European countries and the United States that the typhoid rate is being rapidly reduced. Civilized countries everywhere seem to be experiencing a progressive and remarkable decline in this serious and wide-spread disease. Purdy[1] has recently dwelt with emphasis on the reduction of typhoid in Australasia in the past thirty years. In the cities of Australia the typhoid death-rate (deaths per hundred thousand) fell in Sydney from 51 3 in 1885-1890 to 13.2 in 1901-1910; in Melbourne from 83.8 in 1885-1890 to 11 in 1901-1910, and in Brisbane from 30.6 in 1895-1900 to 17.6 in 1901-1910 In Hobart the capital of Tasmania, the rate averaged 100.5 in 1885-1890 but had fallen to 24.7 in 1901-1910. In New Zealand it had diminished to 6.6 for the decade ending 1910. a rate that compares favorably with the typhoid death-rate in any European country Purdy, in the article referred to, seems inclined to attribute this great typhoid decrease chiefly to the introduction of modern sewerage systems, and cites many instances of outbreaks apparently due to fly infection. Milk infected by flies or by the agency of carriers seems also to have played a large part in causing typhoid in Australasia.

CLINICAL EFFECTS OF "NATURAL" AND "SYNTHETIC" SODIUM SALICYLATE

In the report of a cooperative investigation of the clinical effects of "natural" and "synthetic" sodium salicylate, edited by Dr. Hewlett, which appears in this issue, two deaths are mentioned under the administration of the synthetic salt. After the article had been put in type, the death was reported of a patient with acute infectious arthritis, who received 400 grains of sodium salicylate, one-half being of the natural and one-half of the synthetic salt. The reports of all these cases are included in the reprints of the article.

Medical News

ALABAMA

Antituberculosis Camp Started.—The United Charities of Bessemer have obtained a cottage in a grove and have started an antituberculosis camp.

Personal.—Dr. George T. McWhorter, Riverton, is reported to be seriously ill at his home with cerebral hemorrhage.——Dr. J. H. Nolan has been appointed sanitary engineer for the Tennessee Coal and Iron Company and has been placed in charge of the company's camps in the Birmingham district.——Dr. James C. Gillespie, New Decatur, is reported to be seriously ill.——Dr. Carney G. Laslie, Montgomery, has returned from Europe.——Dr. James B. Hatchette, Marion, has been made a director of the Great Southern Life Insurance Company.——Dr. Robert M. Davis, Florence, has been placed in charge of the Public Health Campaign inaugurated by Dr. W. H. Sanders, state health officer.

ARKANSAS

New Officers.—Fourth Councilor District Medical Society at Lake Village: president, Dr. E. E. Barlow; secretary-treasurer, Dr. W. T. Lowe, Pine Bluff.

Personal.—Dr. Leonard R. Ellis, Hot Springs, has been appointed superintendent of the Government Reservation, vice Major Hallock, deceased.——The building owned by Dr. A. M. Hathcock, Harrison, was burned recently.——Dr. H. H. Smiley, Texarkana, has returned from Europe.

CALIFORNIA

Appropriations for Southern California.—The State Board of Control has made the following appropriations to Southern California institutions: Southern California Hospital, Patton, $845,015; New Southern California Hospital, $250,000, and Los Angeles Medical College, $45,000.

Hospital News.—The main building of the Marin County Hospital on the county property, five miles north of San Rafael, was seriously damaged by fire, July 13. One inmate received slight burns during removal.——The new hospital for Pomona, erected at a cost of $50,000, is almost ready for occupancy. The equipment is already being installed.——Bids have been asked for the construction of a reinforced concrete hospital building on the county farm, near Santa Anna. The building is to be 48x90 feet, two stories and a basement with a solarium on the roof.

GEORGIA

New Officers.—First District Medical Society of Georgia at Savannah and Tybee, July 21: president, Dr. John L. Kirkendol, Millen; secretary-treasurer, Dr. Charles Usher, Savannah (reelected). The next meeting will be held in Waynesboro

Personal.—Dr. W. C. Lyle has been reappointed lieutenant-colonel and aide-de-camp on the staff of Governor Slaton.——Drs. J. P. Hall and J. G. Wilkins have been reappointed city physicians of Atlanta and Dr. W. T. Brown has been elected a member of the Grady Hospital Board, vice Dr. George S. Tigner, resigned.——Dr. J. B. Kennedy has been reelected health officer and Dr. Claude A. Smith city bacteriologist of Atlanta.——Dr. B. E. Pearce, Atlanta, dislocated his shoulder at St. Simon's Island, July 6.——Dr. S. A. Visanska has returned to Atlanta, recovered, after several months' absence in search of health.

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[1] Purdy: Med. Officer, June 7, 1913, p. 269.

ILLINOIS

New Officers.—Ogle County Medical Society at Rochelle, July 16: president, Dr. R. E. Stevens, Rochelle; secretary-treasurer, Dr. J. T. Kretsinger, Leaf River.

Personal.—Dr. Patrick M. Kelley, Litchfield, has been appointed superintendent of the Kankakee State Hospital, vice Dr. Sidney D. Wilgus, resigned.——Dr. J. A. Pratt, Aurora, sailed for Europe, July 21.——Dr. Stewart C. Thompson, Byron, was painfully injured in a collision between his automobile and a St. Paul freight train, July 23, in Byron.——Dr. Charles Zorger, Bloomington, is ill with nephritis at the home of his brother in Champaign.——Dr. W. L. Athon, formerly superintendent of the Anna State Hospital, will devote his entire time to the Marshall City Bank, of which he is president.——Dr. and Mrs. Charles J. Swan, Evanston, sailed for Europe, July 24.——Dr. William Barnes, Decatur, was operated on at Mercy Hospital, Chicago, July 22, and is said to be doing well.——Dr. John J. Grant, after three years in hospital work in New York, has returned to Freeport and will locate there.——Dr. R. S. Cowan, Girard, is reported to be seriously ill at his home.——Dr. John E. Allaben, Rockford, sailed for Europe, July 23.

Chicago

Dispensary Opened.—Maimonides Hospital, 1519 South California Avenue, opened its free dispensary to the public, July 28. It is said to be the only orthodox Jewish institution of its kind in the West.

Personal.—Dr. John J. Killeen and Dr. and Mrs. Cassius C. Rogers have sailed for Europe.——Dr. and Mrs. David Monash have returned from abroad.——Dr. Maximilian Herzog has been appointed dean of Bennett Medical College and head of the department of pathology, bacteriology and hygiene; Dr. Charles H. Miller has been made head of the department of therapeutics and Dr. Ulysses J. Grim, professor of otology and laryngology.

IOWA

New Officers.—Iowa Union Medical Society at Cedar Rapids, July 8: president, Dr. F. G. Murray; secretary, Dr. C. S. Krause, both of Cedar Rapids.

New State Board.—The new State Board of Health began its official duties July 5. Dr. G. H. Sumner was reappointed secretary. The new board consists of Lafe Higgins, Des Moines, and Drs. H. A. Dittmer, Manchester, J. L. Tamisien, Missouri Valley; G. F. Severs, Centerville, and Walter L. Bierring, Des Moines.

LOUISIANA

New Buildings for State Hospital.—Two new buildings for the criminal insane are being erected by the inmates of the State Insane Hospital, Jackson.

Object to Hospital.—Twenty-five property owners and residents of Carrollton have won their fight against the proposed establishment of an antituberculosis hospital in that place.

Personal.—Dr. C. D. Wilkins, superintendent-elect of the Charity Hospital, recently visited New Orleans to consult with the hospital authorities regarding the details of the management of the institution of which he is to take charge in October.——Dr. S. Y. Alexander, Shreveport, has gone to Baltimore for a special course of fourteen months at Johns Hopkins.——Dr. Charles McVea, Baton Rouge, for several years physician to the Louisiana State University, has resigned.——Dr. and Mrs. Charles W. Duvall, New Orleans, have sailed for Europe.

MARYLAND

Nurses' Home Presented.—A nurses' home has been presented to the Frederick City Hospital by Mrs. Georgiana Houck Simmons.

Hospital Nearly Ready.—The Frostburg Miners' Hospital, for which the state has appropriated $25,000, is nearing completion and will be ready for occupancy September 1. The site was donated by the city.

Joint Society Meeting.—The Washington County Medical Society was entertained at dinner by the Frederick County Medical Society, July 24. The visitors came in automobiles and spent the day on the mountain. The principal address of the meeting was delivered by Dr. Hiram Woods, Baltimore, on "Preventable Blindness."

Baltimore

Personal.—Drs. H. O. Reik, Walter A. Baetjer, John Ruhräh and W. L. Moss, and Dr. and Mrs. W. S. Thayer have sailed for Europe.——Dr. E. H. Rowe has returned from abroad.——Dr. E. L. Whiting has been appointed associate professor of physiological chemistry, pharmacy and clinical pathology and Dr. H. R. Spencer, associate professor of pathology and bacteriology in the University of Maryland.——The Franklin Institute, Philadelphia, has conferred on Harry C. Jones, professor of physical chemistry in Johns Hopkins University, the Edward Longstreet medal of merit for his article on "The Nature of Solution."

MASSACHUSETTS

Personal.—Drs. Edward E. Jack, F L. Jack, J. L. Goodale and Dr. and Mrs. H. H. Germain, Boston, and Drs. Edmund H. Stephens and Fred J. Jonett, Cambridge, sailed for Europe, July 23.——Dr. George L. Richards, Fall River, was operated on at Truesdale Hospital, New Bedford, July 15, and is reported to be doing well.

More Beds Needed for Consumptives.—Dr. Simon Cox, superintendent of the Mattapan Hospital, states that the hospital should be equipped with at least 600 beds. The total number of beds now available, including 100 outside the institution, is 350, while there are no less than 1,200 cases of advanced tuberculosis without hospital facilities of any kind. The Mattapan Hospital has at present a waiting list of more than 200. A children's building has just been completed at the institution which will be ready to receive patients in September.

MINNESOTA

Insane Patients Transferred.—A number of insane male patients have been transferred from the St. Peter State Hospital to the State Hospital at Hastings.

New Officers.—Wabasha County Medical Society, forty-fifth annual meeting at Wabasha, July 15: president, Dr. Emery H. Bayley; secretary-treasurer, Dr. William F. Wilson, both of Lake City.

New Hospital for St. Paul.—At the annual meeting of the directors of the St. John's German Lutheran Hospital, St. Paul, it was decided to erect a new building to occupy ground adjoining the present structure and to cost $75,000.

Personal.—Dr. J. Clark Stewart, Minneapolis, who has been seriously ill at St. Agnes' Hospital, Baltimore, is reported to be much improved.——Dr. Arthur C. Strachauer, Minneapolis, has gone abroad.——Dr. H. M. Bracken, secretary of the State Board of Health, has been delegated to represent the Royal Sanitary Institute, London, England, at the School Hygiene Conference in Buffalo.

MISSOURI

Charges Against Hospital Unfounded.—Dr. Franklin E. Murphy, chairman of the committee appointed to investigate conditions of the Kansas City Hospital, which resulted in the recent walk-out of nurses, reports that the charges of mismanagement have been exaggerated.

Personal.—Dr. Jefferson D. Griffith has resigned as consulting surgeon for the Kansas City Hospital. Dr. Franklin E. Murphy has succeeded Dr. John L. Robinson on the staff, Dr. P. T. Bohan has succeeded Dr. R. T. Sloan and Dr. John H. Outland has succeeded Dr. Jabez N. Jackson.——Dr. J. F. Binnie, Kansas City, who has been seriously ill at Rochester, Minn., is reported to be convalescent.——Dr J Sherwood Jacoby, Kansas City, has been appointed surgeon for the Missouri, Kansas and Texas System, and is at present traveling examining surgeon for their lines north of Denison, Texas.——Dr. J. E. Logan has resigned from the staff of Kansas City Hospital.——Dr. T. M. Monroe, Laddonia, sustained a fracture of the leg and severe bruises in a collision between his automobile and a passenger train at Laddonia, July 17.

St. Louis

Pasteur Institute Incorporated.—Articles of incorporation for the Pasteur Institute were filed July 10. The institution has a capital stock of $2,000 and the incorporators are Dr. R. B. H. Gradwohl, Roy M. Eilers and William S. Schaumburg. The institute is a branch of the New York Institution and occupies twenty-two rooms in a three-story building on North Garrison Avenue. Dr. L. Whitley is director of the institute and physician of the hospital.

Hospital Notes.—The Missouri Baptist Sanitarium is making an earnest effort to secure subscriptions of $50,000 in order to secure the contingent gift of $100,000 of the late A. D. Brown. Thus far, more than $33,000 has been pledged. ——*The trustees' sale of* Bethesda Hospital has been postponed.——St. Luke's Hospital has obtained a permit to build a four-story addition at a cost of $97,000 and to make alterations in the present building, amounting to $15,000.——St. Louis women have subscribed $21,000 for the benefit of the St. Louis Maternity Hospital.——Arrangements have been made that hereafter every ambulance summoned by an emergency call in the central district, will be accompanied by a surgeon prepared to give first-aid treatment.

NEW YORK

New Officers.—Lake Keuka Medical Association at Penn Yan, July 17-19: president, Dr. Floyd S. Crego, Buffalo; secretary-treasurer, Dr. C. E. Foster, Penn Yan.

Personal.—Dr. Earl H. King, Saratoga Springs, has succeeded Dr. Lee H. Smith, Buffalo, as a member of the State Board of Medical Examiners.——Dr. John K. Tretton, Rochester, is said to be in a serious condition in Dr. Lee's Hospital as the result of injuries due to the fall of a tree which fell on his automobile, wrecking it.——Dr. Price Lewis, Holland Patent, has resigned as coroner of Oneida County on account of his removal to Montana.——Dr. Irving M. Snow, Buffalo, has sailed for Europe.

New York City

Optometrists Graduate.—Columbia University has just graduated twenty men from the new course in optometry which, at the time of its founding several years ago, was so strenuously opposed by the medical profession. These students will be required to pass a state examination before being licensed to practice optometry. One of the reforms which the optometrists hope to effect is that of preventing cheap stores from selling glasses to those who pick what seems best suited to their taste regardless as to whether the glasses are really suited to the needs of the case.

Examination for Assistant Director of Hygiene.—An examination for applicants for the position of assistant director of public education and hygiene for the schools of New York will be held September 29 at the hall of the Board of Education, Park Avenue and Fifty-Ninth Street. This examination will be open to graduates of medical schools recognized by the Regents of the University of the State of New York and who have had one year of specialized experience in pediatrics. In addition to the written examination, there will be an oral examination in physical diagnosis and also clinical tests.

NORTH CAROLINA

Wholesale Vaccination.—As the result of a development of small-pox in a recent admission to the Morganton State Hospital, the superintendent has caused each of the 1,650 inmates of the institution to be vaccinated.

Malaria Study.—Congressman Small has arranged with the United States Public Health Service to have one of its officials visit eastern North Carolina to study the question of malaria in the most improved, modern methods of scientific investigation. Municipal and county health officials in the eastern counties who desire investigation to be made should communicate promptly with the Surgeon-General, U. S. P H. S., at Washington.

Personal.—Dr. Clarence Judd, formerly of Cardenas, has returned from New York City, and will practice in Raleigh. ——The following county superintendents of health have been elected: Catawba County, Dr. James R. Campbell, Newton; Halifax County, Dr. I. E. Green, Weldon; Johnson County, Dr. H. H. Utley, Benson.——Dr. Alice E. Johnson, who was recently operated on at the Mercy Hospital, Asheville, is reported to be greatly improved.——Dr. J. R. Irvin, Charlotte, who has been seriously ill at his home, is reported to be convalescent.——Dr. and Mrs. Joseph Howell Way, Waynesville, celebrated the twenty-fifth anniversary of their marriage, July 31.

Hospital Staff Elected.—The following officers of the staff of the Meriwether Hospital have been elected: Dr. Chase P. Ambler, chief of staff; Dr. Eugene B. Glenn, assistant chief of staff; Dr. W. V. Hunnicutt, assistant treasurer and resident physician. The staff of the hospital at present consists of Drs. Eugene B. Glenn and F. Webb Griffith, surgeons; Drs. Chase P. Ambler, Martin L. Stevens and Arthur F. Reeves, general medicine; Dr. Arthur H. Calloway, gastroenterology; Dr. C. W. Brownson, dermatology; Dr. R. S. Carroll, neurology; Drs. E. Reed Russell and R. G. Buckner, ophthalmology, otology, rhinology and laryngology; Dr. Lewis W. Elias, pediatrics, and Dr. W. J. Hunnicutt, resident physician.

PENNSYLVANIA

Off for Europe.—Drs. T. P. Simpson, Beaver Falls, and Walter Lathrop, Hazleton, have sailed for Europe.

New Officers.—Lehigh Valley Medical Society at Buckwood Inn, Shawnee on Delaware, July 17: president, Dr. G. S. Seiberling, Allentown; secretary, Dr. J. W. Luther, Palmerton.

Camp Becomes Borough.—By decree of the Franklin County Court, July 22, Mount Alto, the white pine camp for consumptives, will be made a borough, August 23, and a special election for borough officers has been ordered.

Personal.—Dr. R. R. Huggins, Pittsburgh, sailed for Europe, July 26.——Dr. V. Hummel Fager, Harrisburg, has returned from Europe.——Dr. A. B. Woods, Erie, who was operated on recently for appendicitis, has returned home convalescent. ——The house of Dr. S. C. White, Wilkinsburg, was burned July 16, with a loss of about $7,000.

Philadelphia

Personal.—The following physicians have sailed for Europe: Eugene L. VanSant, Ross Hall Skillern, Robert F. Ridpath, A. H. Gerhard, F. X. Dercum, Charles K. Mills, Paul J. Sartain and T. H. Weisenburg.

Fewer Trolley Accidents.—The report of the Rapid Transit Company for the year ended June 30, 1913, shows that the number of trolley accidents in this city decreased 9 per cent., while the number of passengers carried increased more than 6 per cent.

Tourists Urged to Use Antityphoid Virus.—Dr. Joseph S. Neff, director of public health and charities, has issued a bulletin, urging all persons contemplating vacation visits to places where there is any doubt of the purity of the water to take the antityphoid fever treatment. The Department of Health will supply the family physician with the vaccine or people may be treated at their homes or at the offices of the Bureau of Health in the City Hall by the city's medical inspectors.

Navy Yard Blamed for Lax Guarding of Drugs.—As a result of testimony that hundreds of sailors are becoming drug fiends, because of careless supervision of medical cabinets on board battleships, a coroner's jury rendered a verdict, July 25, in an inquest into the death of a sailor of the *U. S. S. Connecticut*, censuring the government. Martin's death was due to heroin, a bottle of which, marked "government property" was found beside him when he collapsed. The medical staff at the yard has been reduced from sixteen to four medical officers and it is said that the keys of the poison chests sometimes fall into the hands of others than physicians.

Babies' Clinics.—Mrs. Margaret Simons, the trained nurse who conducts the weekly clinics at the Cohocksink School, Fourth and Montgomery Avenue, has announced that there has been a steady gain in the weight of the children under her care and that 90 per cent. of them are in fit physical condition. She is working in connection with the Children's Homeopathic Hospital, the Children's Country Week and the University Settlement and makes daily visits in the nineteenth ward. The Child Hygiene Committee held a clinic in the Italian Mission at Tenth and Kimball Streets, July 16, at which thirty-five small girls (little mothers) were taught how to care for their small charges. Through the efforts of the volunteer workers of the committee, a series of little mothers' leagues have been formed throughout the city.

Fund for Medical School in China.—Dr. J. S. McCracken, president of the University Medical School in Canton, China, sailed July 28, carrying with him more than $30,000, which has been subscribed through the Christian Association of the University of Pennsylvania for new buildings and running expenses of the Canton School. The association will continue to try to raise the rest of the $70,000 needed to build the additions. To increase the efficiency of the medical school, it is planned to erect new buildings at the cost of $68,000, these to contain the executive offices, laboratories, private wards and operating rooms. When these plans are carried out the school will have more than two hundred beds.

TENNESSEE

New Tuberculosis Hospital.—Several local physicians of Nashville have established the Watauga Sanatorium, Ridgetop.

near Nashville. The officers of the institution are: Dr. John A. Witherspoon, consulting physician; Dr. William Litterer, pathologist-in-chief; Dr. W. A. Bryan, surgeon-in-chief; Dr. Giles C. Savage, consulting physician of the eye, ear, nose and throat; Dr. O. N. Bryan, visiting physician; Dr. W. T. Eatherly, roentgenologist; Dr. J. M. King, dermatologist, and Dr. Charles W. Robinson, medical director.

Personal.—Dr. and Mrs. John A. Witherspoon, Nashville, sailed for Europe from Boston, July 23.——Dr. Max Goltman, Memphis, has gone abroad.——Dr. R. M. Murray, Trezevant, suffered a cerebral hemorrhage, recently.——Dr. Samuel W. White, Franklin, is under treatment in the Nashville Hospital for disease of the eye.——Dr. Z. D. Massey, Sevierville, who was operated on recently for appendicitis, is reported to be convalescent.——Dr. A. M. Townsend, Nashville, has accepted the presidency of Roger Williams University.——Dr. C. E. Barnett, Newport, is ill with typhoid fever.

TEXAS

Personal.—Dr. S. H. Moore, Houston, fractured his right arm in an automobile accident, July 22.——Dr. E. S. Chambers, Jr., Annona, is under treatment in the Aiken Hospital for septicemia, from which he has been suffering for more than a year.

Tuberculosis Hospital Opened.—Woodlawn Hospital, the Dallas city and county sanatorium, was opened July 19 for the care of patients who are bone fide residents of the county. The institution has cost $37,000 already and much remains to be done before the advent of cold weather.

GENERAL

Personal.—Major Henry Page, M. C., U. S. Army, has sailed for Europe.——Dr. C. L. Alsberg, chief of the bureau of chemistry of the United States Department of Agriculture, Washington, has been appointed secretary of the Association of Official Agricultural Chemists.

Railway Surgeons' Meeting.—At the sixth annual meeting of the Surgeons' Association of the Buffalo, Rochester and Pittsburgh Company, held in Niagara Falls, N. Y., July 9, Dr. T. T. Mooney, Rochester, was elected president; Dr. J. D. Palmer, Johnsonburg, Pa., vice-president, and Dr. J. G. Flynn, Ridgway, Pa., secretary. Dr. Roswell Park, Buffalo, addressed the association on "Brain Surgery."

Austin Flint Association Meets.—At the semi-annual meeting of the Austin Flint Medical Association held in Mason City, Ia., July 8-9, the following officers were elected: president, Dr. W. F. Cobb, Lyle, Minn.; vice-president, Dr. George Kessel, Cresco, Ia.; secretary, Dr. C. Freeman Starr, Mason City, Ia. (reelected), and treasurer, Dr. W. L. Hearst, Cedar Falls, Ia. (reelected). Fort Dodge was selected as the next place of meeting.

Chattahoochee Valley Physicians' Meeting.—At the thirteenth annual meeting of the Chattahoochee Valley Medical and Surgical Association, held in Montgomery, Ala., July 15-16, West Point, Ga., was selected as the next place of meeting and the following officers were elected: president, Dr. J. M. Poer, West Point, Ga.; vice-presidents, Drs. O. Velpeau Langly, Opelika, Ala., and C. S. Yarbaugh, Auburn, Ala.; secretary-treasurer, Dr. W. J. Love, Opelika, and councilor, Dr. Hugh McCollough, West Point, Ga.

International Association of Medical Museums.—The third triennial meeting of the International Association of Medical Museums will be held in the Museum of the Royal College of Surgeons and the Museum of the Seventeenth International Congress of Medicine, London, August 5-7. The president's address by Prof. A. S. Warthin, Ann Arbor, will be on "Ideals and Functions of the International Association of Medical Museums." On the second day there will be a symposium on replies received to Experience Circular No. 2, and on the third day there will be papers and demonstrations of museum technic.

The International Congress on School Hygiene.—The program and arrangements have been about completed for the Fourth International Congress on School Hygiene, which is to be held in Buffalo, August 25 to 30. An energetic campaign has been conducted by the management to insure the success of the congress. Committees to promote the congress have been formed in thirty-three foreign countries and in forty-five states, and teachers, investigators, physicians, dentists, sanitarians and public spirited citizens from every quarter of the globe have manifested the greatest interest in the congress and the attendance will undoubtedly be large. Over 300 speakers have signified their intention of taking part in the program, and fifteen national associations interested in health problems have arranged special symposiums for the Buffalo meeting, one section of the congress being devoted to such symposiums. In addition to this section, there will be a section on the hygiene of school grounds, building material, equipment and up-keep; a section on hygiene of school administration; a section on hygienic and sanitary supervision of schools. Each of these sections will have a large number of papers covering all the features of school hygiene. Special sessions have been arranged for on such subjects as school feeding, oral hygiene, sex hygiene, mental hygiene, conservation of vision in school children, health supervision of university students, school illumination, relation between physical education and school hygiene, tuberculosis among school children, physical education, college hygiene, and mentally defective children. Each of these special sessions has had its program arranged by associations, committees and individuals working especially along that particular line. The President of the United States has been made honorary chairman of the congress and will open the session either in person or by representative. Many of the most distinguished men of all nations interested in school problems will be present at the congress.

Abundant provisions have been made by the people of Buffalo for the care and entertainment of the guests. A minor, but interesting, feature of the local arrangements is the provision for 2,000 boy scouts of all nationalities and speaking all languages to act as guides and interpreters for the visitors during the congress.

The subjects relating to the health and welfare of school children have received a tremendous amount of attention within recent years, and indeed they are among the most important of our problems concerning national welfare.

The congress at Buffalo will undoubtedly promote great practical interest in, and supply important facts concerning school hygiene to those who will use them in a practical way, and that is the prime object of the congress.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, July 11, 1913.

Proportion of Sexes at Birth

Biologists have studied, for many years, the question of determining sex in man and animals. In the human race they have tried to find out whether the proportion of boys to girls among the infants born would not explain, at least partially, the origin of sex. Following up this subject, Dr. A. Pinard of the obstetric clinic of the Faculté de médecine de Paris, and A. Magnan have recently furnished the Académie des Sciences with some interesting statistics in regard to the deliveries at the Baudelocque clinic. These statistics merit confidence as they have been kept in the most thoroughly scientific way. Each woman has a chart on which is shown, in addition to her case history, the sex, weight and measurements of her child. Taking into consideration only the living infants dismissed from the Baudelocque clinic, we find that during the period of twenty years from 1891 to 1910 inclusive, there were 42,183 deliveries. Of these, 19,122 were boys and 18,630 girls, making a proportion of 102 boys to 100 girls.

There is, therefore, an excess of male births and the same was found to be true for each one of the twenty years. But in addition to the living infants, we must consider the stillborn ones and those who die during the few days that the mother stays at the clinic. To know the exact relation of male to female conceptions, we must add to the number of living children those who die during pregnancy and labor and shortly after birth. So we will get the absolute number of boys and girls procreated, minus the embryos expelled in abortion, whose sex cannot be determined. These figures show that the excess of males over females procreated is much greater than the excess when we count only the living children. The reason for this is, as Pinard and Magnan have explained before (THE JOURNAL, March 29, 1913, p. 1010), that the males undergo more traumatism during labor on account of their greater weight.

Antityphoid Vaccination in the Navy

A circular issued by the secretary of the navy states that since experimental antityphoid vaccination was authorized in the navy, April 5, 1912, 3,652 men have been vaccinated and no bad results has followed in any case, neither local nor general reactions have been excessive, and, moreover, not one of the men has had typhoid fever. The secretary requests the medical profession to make public in their meetings the efficacy and harmlessness of the vaccine prophylaxis of typhoid fever.

In contrast with these results it is of some interest to call attention to a communication, made to the Société Anatomo-Clinique by Drs. Auché and Chevalier, reporting a case of failure of antityphoid vaccination. A soldier of the foreign legion was vaccinated in January, 1911, and on July 14 of the same year he was admitted to the hospital with quite a severe typhoid fever followed by phlebitis of one leg. Vaccination did not prevent this man from contracting typhoid fever.

Auché and Chevalier admit that this failure, similar to those which occasionally follow small-pox vaccination, does not affect the value of the procedure, for it seems to have been due to the particularly unfavorable conditions surrounding the patient, fatigue, a very severe epidemic, etc. They believe that the customary hygienic and prophylactic measures should not be neglected. They hope, moreover, that in the future cases of failure such as this one will be published, so that we may determine the duration of the immunity, the conditions under which it is deficient and when revaccination is indicated.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 4, 1913.

Personal

Professor Kruse has accepted the call as director of the Hygienic Institute at Leipsic as successor of Professor Hofmann.

The Berlin Medical Society and Friedmann's Remedy

In the discussion at the Berliner medizinische Gesellschaft on the address of Professor Westenhöffer, which I reported in the last letter, Professor Schleich, who treated patients at his policlinic in conjunction with Friedmann with the Friedmann remedy and also continued treatment after Friedmann sailed for America, proposed that the society should appoint a committee which should undertake a scientific test of the remedy in the form which should seem acceptable to them. The executive committee and the president of the society took the matter under advisement and unanimously concluded to decline the proposal on the ground that the committee was unnecessary, as a test could easily be made if Friedmann would furnish the remedy in sufficient amount to clinicians. The society in committee of the whole adopted this decision.

Zeller's Cancer Treatment

Last year Zeller of Weilheim, a former assistant of Czerny, the Heidelberg surgeon, aroused considerable interest by publishing an article in the *Münchener medizinische Wochenschrift* on a successful treatment of cancer patients. The work attracted special attention because Czerny himself wrote an introduction in which he recognized the success which Zeller had obtained, and recommended the process to practicing physicians for trial. The method was in part quite old as it consisted exclusively in the use of an arsenic paste, the Pasta Cosmi, which had been known for many years, supplemented by a solution of sodium silicate taken internally. With this method of treatment he claimed that he had cured a large number of patients with external cancer of the skin as well as of the bones. Among critical readers these articles of Zeller aroused considerable objection at first, in spite of the recommendation of Czerny. A few weeks ago these objections received for the first time a basis in fact by the transactions of the Leipsic Medical Society (Leipzige medizinische Gesellschaft) in which Professor Payr, director of the surgical clinic, and Professor Zweifel, director of the gynecologic clinic, reported the complete failure of the method.

As a supplement to these statements, the editor of the *Deutsche medizinische Wochenschrift*, Professor Schwalbe, initiated a collective investigation among all directors of surgical clinics in Germany, Austria and Switzerland regarding the results which they had obtained with the method. The results of this investigation he has published with the literal answers in the number of his weekly which has just appeared. The conclusions which may be drawn from this article are directly fatal to the method. A number of the professors refused to use the remedy because they had well-grounded doubts as to its efficiency; others gave it up after a short trial on account of its worthlessness; a third group among whom were Bier of Berlin, Perthes of Tübingen, Schloffer of Prague, etc., did not obtain the slightest success. Perthes reports also with reference to an arterial racemose aneurysm of the forearm which was treated by Zeller himself with the caustic pasté until the hemorrhage caused the patient to forbid the continuation of the treatment. Anschütz reports that Zeller would not receive one of his assistants whom he wanted to send to him to inform himself regarding the method and results, because he was not willing to show his material. Schwalbe concludes his investigation, which he undertook, according to his own words, "in the interests of the sick and of science," with the question whether Zeller still, in the face of these reports, will adhere to his optimistic opinion. He regards it, however, as of more consequence if from the results of this investigation the general conviction should result that greater care and a more critical attitude should be observed regarding the publication of new methods of treating cancer than has hitherto obtained.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 12, 1913.

Complete Loss of Hair Caused by a Psychic Trauma

An interesting case of trophic disturbance after a fright was demonstrated recently at the Gesellschaft der Aerzte by Docent Dr. Nobl. A tram-car driver, otherwise healthy, 31 years of age, had a collision with an automobile. Seeing the auto dashing toward his tram, he made the utmost attempts to stop the inevitable crash, and jumped off the platform just in the nick of time. He was speechless for some minutes after the accident, otherwise unhurt, but fearfully upset and out of his wits. A few days afterward he noticed that his hair on the scalp came out in handfuls, his mustache and beard could be pulled out, and his eyebrows as well as all other hair on his body fell out in the course of the next four weeks. Only a few single hairs remained in the right armpit and on the pubes. At the time of demonstration, the skin was completely free from hair, smooth and glossy, no other pathologic condition being visible. The explanation given for this neurotic alopecia is that from the central functional (emotional) irritation, vasomotoric impulses were given off to the small arterioles of the skin. This temporary disturbance of the skin circulation, as shown by a contraction of the smaller arteries, is sufficient to interfere with the continuity of the matrix cells of the hair, and thus prepares the loosening of the hair from its follicle.

Severe Criticism on Medical Study for Women

In the course of some public lectures on the higher education of women, Professor Hochenegg, the director of the first surgical clinic in Vienna, gave publicity to his disappointment with the women who took up the medical career in this country. He severely criticized the lack of a sense of responsibility as well as the small amount of presence of mind at the command of female doctors. He is therefore of the opinion that there is no justification for females taking up this particular branch of study, and he pointed out that hitherto, although there are female doctors all over the world, not a single woman has been able to give to medical science anything really original or very important, and medicine has made large progress during the last twenty-five years only through men. Naturally these statements aroused a storm of indignant protests on the part of the doctors of the "weaker sex" in this country. They justly contended that in hospitals female doctors had the same duties and responsibilities as their masculine colleagues, and they pointed out the examples of other countries, which they think show the fallacy of the professor's assertion. Nevertheless, they were not able to prove that female genius has made its impression on the progress of medicine, and this fact is cited as proving that there is something in Hochenegg's bitter words worth thinking about.

The Summer Vacation Classes in Vienna

During the months of August and September, a number of classes will be held in the Vienna hospitals by the assistants and privat docents, which have the advantage of not being so crowded as those held during the winter or summer terms. As a rule, the material is abundant and instructive, as only the more interesting and rarer cases are received into the wards. Classes in special surgery, internal medicine, hematology, diseases of the eyes, nose and ears, and diagnostic classes on midwifery and obstetrics offer at this time special benefit to the students. All these classes last four weeks. Details may be had on application to the "portier" of the general hospital.

Deaths

Arthur Lee Wright, M.D. fourth vice-president of the American Medical Association in 1911-1912 and for six years a member of its Board of Trustees; one of the most eminent surgeons of Iowa; died at the American Hospital, Paris, July 19, four days after an operation for the relief of intestinal obstruction, aged 62.

He was born in Madison, Wis., Jan. 17, 1851, and received his preliminary education in the public schools *of that city.* After studying with a preceptor in Madison, he entered Rush Medical College and graduated *in the spring* of 1873. A year later he began practice in Carroll and continued uninterruptedly until the time of his death. He was for many years a fellow of the American Medical Association; and had also served as president of the American Association of Railway Surgeons, the Iowa State Medical Society and the Central District Medical Association of Iowa, and at the time of his death was president of the Association of Northwestern Railway Surgeons, of which he had been one of the founders.

Dr. Wright sailed for Europe on the *Bremen*, July 3, with a number of members of the American Society of Physicians' Study Travels intending to make a tour of the Continent before attending the International Medical Congress in London. On reaching Paris, he was taken ill with intestinal obstruction and was operated on for the relief of this condition in the American Hospital, but died July 19. He had been operated on in 1908 for appendicitis but was apparently in a normal condition of health when he left for Europe.

Dr. Wright was a man of marked personality, endowed with rare qualities of intellect and with indomitable energy. In the sickroom he possessed the quality of inspiring his patients with hope and good cheer.

Arthur Lee Wright, 1851-1913

Horace F. Jayne, M.D. University of Pennsylvania, Philadelphia, 1882; assistant instructor in biology in his alma mater; from 1884 to 1889 professor of anatomy and secretary of the faculty and later director of the Wistar Institute of Anatomy and from 1889 to 1894 dean of the faculty; a fellow of the Philadelphia College of Physicians and a member of the board of directors of the Drexel Institute, Philadelphia; who made many important gifts to the University of Pennsylvania, the largest of which was a donation of $50,000 to found the present department of biology; a prolific writer on medical and scientific subjects; died at his home in Wallingford, Pa., July 8, from heart disease, aged 54.

Rose Willard, M.D. Northwestern University Women's Medical School, Chicago, 1891; a member of the Illinois State Medical Society; assistant professor of gynecology in her alma mater; died at her home near Belmont, Downer's Grove, Ill., July 21, aged 46.

James Linn, M.D. Cincinnati, 1840; who established the first drug stores in Hillsboro, Pana and Oconee, Ill.; a surgeon of volunteers during the Civil War; an active practitioner of medicine for nearly sixty years; died at his home near Oconee, July 20, aged 98.

Phillip O. Porter, M.D. Long Island College Hospital, Brooklyn, 1875; of Springport, Mich.; a member of the British Gynecological Society; died in Chicago, July 14, from heart disease, aged 61.

Monte Griffith, M.D. University of Maryland, Baltimore, 1896; a member of the American Medical Association and Washington Ophthalmological and Otological Society; assistant professor of ophthalmology in Georgetown University, assistant surgeon to the Eye, Ear and Throat Hospital and ophthalmologist to the Children's Hospital, Washington; for many years a practitioner of Washington; died July 11 from angina pectoris at his home in Cherrydale, Va., where he had lived since his retirement, two years ago, aged 51.

George Washington Terriberry, M.D. Bellevue Hospital Medical College, 1866; a member of the Medical Society of the State of New Jersey and one of the best-known practitioners of Passaic County, N. J.; medical cadet and later assistant surgeon of volunteers during the Civil War; from 1880 to 1909 a member of the National Guard of New Jersey, retiring with the honorary rank of brigadier-general; died at his home in Paterson, July 14, from heart disease, aged 73.

Ransom Newell Murray, M.D. Jefferson Medical College, 1866; for twenty-one years physician for the Michigan School for the Deaf, Flint; a fellow of the American Medical Association; died at the home of his daughter in Mendon, Mich., July 18, from cerebral hemorrhage, aged 82. At a special meeting of the Genesee County Medical Society, July 19, resolutions of regret and sympathy were adopted and the members of the society acted as active and honorary pall bearers at the funeral.

William Floyd Randall, M.D. Baltimore University School of Medicine, 1890; a fellow of the American Medical Association; of Dushore, Pa.; while endeavoring to rescue a well-digger who had been overcome by gas, July 17, was himself overcome and fell to the bottom of the well, sustaining injuries from which he died, a few hours later, aged 46.

Charles Reed Pratt, M.D. Yale University, New Haven, Conn., 1905; a member of the Connecticut State Medical Society; for more than five years surgeon at the Emergency Hospital, Bridgeport, Conn.; died at his home in that city, July 16, from septicemia, following an infection of the throat, aged 34.

Leslie Hill Wheeler, M.D. Medical School of Maine, Portland, 1882; a fellow of the American Medical Association; formerly of South Brewer, Me.; died at his home in Los Gatos, Cal., March 24, from lobar pneumonia, aged 59.

Eliza Miller Le Duc, M.D. Hahnemann Medical College, Chicago, 1886; a nurse during the Civil War; later a teacher of colored children in the South and superintendent of the Industrial School for Girls, Chicago; since 1886 a resident of Los Angeles; died at her home in Sierra Park, a suburb of that city, July 13, aged 75.

James Edward Morris, M.D. Starling Medical College, Columbus, Ohio, 1857; Bellevue Hospital Medical College, 1874; a fellow of the American Medical Association and for fifty years a practitioner of Liberty, Ind.; died at his home, July 19, aged 84.

James Bernard Shannon, M.D. College of Physicians and Surgeons, New York City, 1895; of Danielson, Conn.; a member of the Connecticut State Medical Society; died at a sanatorium in Falls Village, Conn., July 15, from nephritis, aged 42.

Alfred Wainscott, M.D. Louisville (Ky.) Medical College, 1887; a member of the Kentucky State Medical Association; of Bethlehem; died in the Norton Infirmary, Louisville, July 12, aged 53.

Lucien E. Ellis, M.D. University of Buffalo, N. Y., 1879; a member of the school board of Detroit for fourteen years and school inspector for the Sixteenth Ward; died at his home in Detroit, July 12, aged 63. At a special meeting of the Board of Education, July 14, resolutions were adopted reciting the faithful service of Dr. Ellis to the cause of education in Detroit and expressing the regrets of his colleagues at his death.

John Warren, M.D. College of Physicians and Surgeons, New York City, 1881; of New York City; a fellow of the American Medical Association and New York Academy of Medicine; assistant medical director of the Equitable Life Insurance Company; dermatologist to the New York Policlinic Hospital; died in Atlantic City, N. J., July 18, after a lingering illness, aged 57.

Elbert Franklin Sevier Rowley, M.D. Philadelphia University of Medicine and Surgery, 1869; a Confederate veteran; for several terms alderman and for two terms mayor, at one time chairman of the Board of Health and for twenty-five years a member of the Board of School Trustees of Greenville, S. C.; died at his home, July 9, from disease of the intestine, aged 69.

Elza Van Coldren, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1864; a fellow of the American Medical Association; a veteran of the Civil War; for more than thirty years a practitioner of Topeka, Kan.; died at the home of his daughter in that city, July 17, from senile debility, aged 72.

James A. Rea, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1875; Barnes Medical College, St. Louis, 1899; a member of the Kansas Medical Society; formerly a member of the American Medical Association; died at his home in Wellington, June 28, from nephritis, aged 72.

William Joseph Glinnen, M.D. Bellevue Hospital Medical College, 1897; for fifteen years a practitioner of the eastern district of Brooklyn and Greenpoint; died in St. Catherine's Hospital, Brooklyn, July 13, after an operation for appendicitis.

Henry Jacques Garrigues, M.D. University of Copenhagen, Denmark, 1869; formerly of New York City and consulting physician to several New York hospitals; died at his home in Tryon, N. C., July 7, aged 82.

Leander D. McKee, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1868; a member of the Missouri State Medical Association; died at his home in Wayland, Mo., July 7, from heart disease, aged 69.

Ambrose Herbert Weeks, M.D. Bowdoin Medical College, Brunswick, Me., 1893; a fellow of the American Medical Association; died at his home in Portland, Me., June 28, aged 45.

Marriages

Hugh Buren Henry, M.D., Little Rock, Ark., to Miss Evelyn May Cooper of Kansas City, Mo., at Little Rock, April 30.

Reuel James Tanquary, M.D., St. Louis, to Miss Eva W. Robertson of New York City, at Effingham, Ill., July 19.

Frank Linden Richardson, M.D., Boston, to Miss Constance Mathilde Mathey of Needham, Mass., July 21.

Abraham Trumper, M.D., Montgomery, Ala., to Miss Rebecca Beatrice Fineman of Philadelphia, June 29.

Charles Henry Stone, M.D., Coatesville, Pa., to Miss Elizabeth Comly Hoopes of West Chester, Pa., July 15.

Ulysses Sherman Gregg, M.D., St. Joseph, Mich., to Miss Elizabeth Gale Dye of Niles, Mich., June 25.

James Flemmons Garmany, M.D., to Miss Ada Leona Owens, both of Portales, N. Mex., June 25.

Ralph S. Baynes, M.D., Hurdle Mills, S. C., to Miss Elizabeth Stanford of Portsmouth, Va., July 10.

William P. Rowland, M.D., to Miss Mary Ross Grier, both of Arkadelphia, Ark., July 16.

Edward S. Logé, M.D., to Miss Anna Soukup, both of Milwaukee, at Chicago, July 12.

Edward Frank Gollobith, M.D., to Miss Ida Eadle, both of Hanover, Ill., June 26.

John D. Bubert, M.D., Baltimore, to Miss Elizabeth Tinker, at Baltimore, July 16.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

REEXAMINATION OF LACTOPEPTINE

Report to the Council on Pharmacy and Chemistry

In 1907 the Council on Pharmacy and Chemistry published a report on Lactopeptine. At that time it was shown that Lactopeptine did not have the composition claimed for it. The same claims as to composition are still being made for the product. In view of this fact, a second examination of Lactopeptine has been made and the result reported to the committee on chemistry. The report confirms the Council's findings of six years ago. After adoption by the committee, it was adopted by the Council and its publication authorized.

W. A. Puckner, Secretary.

SECOND EXAMINATION OF LACTOPEPTINE

Two specimens of Lactopeptine in original unbroken packages were recently examined. One of these was an American preparation said to be produced by the New York Pharmaceutical Association at Yonkers and the other an English preparation from John Morgan Richards and Sons, London.

When Lactopeptine was first examined by the Council about six years ago, it was found to be little more than weak saccharated pepsin, and did not contain the other ferments which were claimed by the manufacturers to be present. A statement concerning this was published in the Council Reports for 1905-1908, p. 43. Because of claims recently made by the exploiters that this preparation contains not only pepsin but also pancreatin, diastase, lactic acid and hydrochloric acid, and that the failure to recognize these must be due to the lack of ability of the chemists making the examination, it seemed worth while to undertake a new series of tests on samples from the two sources mentioned, the products on the British and the American markets. The label on the British sample gives the following as the composition:

Sugar of Milk	40 ounces
Pepsin	8 ounces
Pancreatine	6 ounces
Ptyalin or Diastase	4 drachms
Lactic Acid	5 fl. drachms
Hydrochloric Acid	5 fl. drachms

The label on the American sample gives no quantities but states that it "represents a combination of the principal digestive and enzymogenic agents, Pepsin, Pancreatin, Diastase, *Lactic and Hydrochloric Acids, in the proper proportion* to insure best results."

We have examined both preparations for starch-digesting power according to the methods employed in our previous examinations of such ferments and already reported. Diastase and the amylopsin of pancreatin seem to be completely absent, or, if present at all, in such minute traces that digestion of starch is not shown after one hour when quantities running from 60 mg. up to 150 mg. were allowed to act on 500 mg. of starch made up into paste. These tests were repeated, always with the same results, and were controlled by digestions of the same starch with other diastase preparations of known value.

Tryptic activity appears likewise to be absent, as in weak alkaline solution after fifteen hours' digestion no effect on coagulated egg albumin or fibrin was observed when 100 mg. of each preparation was used with 1 gm. of the protein material.

As was found in the previous investigation the two products have some peptic activity, but this activity is comparatively weak, as about 200 mg. of each preparation are required to digest 10 gm. of coagulated egg albumin with 0.2 per cent. hydrochloric acid in three hours at 40 C. (104 F.), and 100 mg. portions were unable to completely digest 10 gm. portions of egg albumin with acid of the same strength in four hours at 50 C. (122 F.).

Hydrochloric acid is absent, as might be expected from the character of the preparation, and the amount of combined chlorid is small; but qualitative tests were obtained for organic acid resembling in behavior lactic acid, which is probably present in combined form.

It must be reaffirmed then that in digestive activity both the Lactopeptine purchased in the United States and that bought in England are essentially weak saccharated pepsins.

Editorial Note.—The report of 1907 demonstrated that Lactopeptine was at that time a weak saccharated pepsin. The present report shows that Lactopeptine, as it is sold both in the United States and in Great Britain, is still the same weak pepsin preparation. By the false statements which appear on the Lactopeptine labels the exploiters lay themselves liable to prosecution under the Food and Drugs Act—just as they have laid themselves liable for the past six years. The continued exploitation of this preparation warrants a restatement of facts that have been given many times before:

1. A preparation having the composition claimed for Lactopeptine—a powder containing pepsin, pancreatin, diastase, lactic acid and hydrochloric acid—cannot be produced commercially.
2. Even if such a combination were available, the acidity of the mixture itself and of the gastric juice would in all probability destroy the pancreatin before it could reach the intestinal tract.
3. Even if every constituent could exert its proper function at the right time, the administration of such a shotgun mixture would be unscientific and uncalled for.

Correspondence

Credit for Discovery of Organism of Parinaud's Conjunctivitis

To the Editor:—I have just read the proceedings of the Section on Ophthalmology (The Journal, July 5, 1913, p. 34) and note what is said with reference to a case of Parinaud's conjunctivitis on which report is made of the discovery of the cause by my friend Dr. Verhoeff of Boston. I regret that at the last moment I was compelled to forego the pleasures and privileges of the meeting; hence I must write thus:

At the meeting of the Chicago Ophthalmological Society held May 19, I read a paper on Parinaud's conjunctivitis in which I announced the discovery of a fungus as a probable cause. I was pleased to learn from the discussion of Dr. Harry Gradle that Dr. Verhoeff made similar announcement two weeks before at the meeting of the American Ophthalmological Society. We have exchanged slides and find that we have discovered the same organism as the cause of the disease. My case was seen first Sept. 18, 1912, and the granulation excised and sent to Prof. H. R. Alburger of the Department of Pathology of the University of Indiana, who did the microscopic work and made the expert diagnosis as noted.

It seems that unknown to each other both Dr. Verhoeff and I started out to find the cause of this rare disease, and to both of us must belong the credit of the discovery.

George F. Keiper, M.D., Lafayette, Ind.

[The foregoing was submitted to Dr. Verhoeff who replied:]

To the Editor:—Permit me to state more fully the facts mentioned by Dr. Keiper in the preceding letter. It is true that we exchanged slides (June 5, 1913) but his statement that we "find that we have discovered the same organism as the cause of the disease," so far as it refers to me, is incorrect. He sent me three slides none of which I found was stained in such a way as to show the organisms described by me. I informed Dr. Keiper of this fact, and obtained his permission to restain one of his slides by my method. I was then able to demonstrate the organisms in great abundance. Dr. Alburger's specimens show the tissues so badly crushed and the fixation so imperfect that I feel sure that he has mistaken something else for organisms, possibly squeezed out nuclei or fibrin.

My paper, in which I described the finding of a hitherto undescribed filamentous organism in eleven out of twelve consecutive cases of Parinaud's conjunctivitis, was read before the New England Ophthalmological Society April 8, 1913, and is now appearing in the July number of the *Archives of Ophthalmology*. I demonstrated specimens of the organisms at this meeting and later before a number of medical societies. Dr. Keiper, I understand, has published nothing in regard to his case, nor has he demonstrated his specimens. He also has given no details in regard to the morphology of his supposed organism or its staining reactions.

F. H. Verhoeff, M.D., Boston.

Typhoid Death-Rate of Memphis

To the Editor:—I beg to call your attention to your article (May 31, 1913, p. 1703), in which you say that Memphis has the unenviable distinction of maintaining the highest death-rate from typhoid fever of any of the large cities of the United States. If you will refer to our correspondence you will note that this mortality rate is explained, and since your editorial has been quoted editorially and otherwise by the lay press of some of the cities in this section as well as other sections, it becomes my duty to take this matter up with you in the interest of simple justice.

M. Goltman, M D., Memphis, Tenn.,
Superintendent Department of Health.

[Comment: The correspondence referred to by Dr. Goltman was a letter in which it was explained that the typhoid situation in Memphis for 1912 was due to the overflow of the Mississippi River, which infected a portion of the city's water-supply. To combat this infection, the health authorities of Memphis administered antityphoid vaccine to over 30,000 people. While the figures in The Journal's article and the statement regarding the typhoid rate of Memphis are both correct, in fairness to that city, the cause of the high rate should have been mentioned. Particularly is this true in view of the enlightened attitude of Memphis citizens in adopting modern prophylactic methods.—Ed.]

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE VERB "MASSAGE"

To the Editor:—In The Journal, June 7, 1913, p. 1814, occurs a question as to the right form of the verb meaning to apply *massage*. According to the common usage of the English language, the verb ought to be, I think, to "massate"—there is a late Latin verb *massare*, borrowed no doubt from the Greek *μάσσειν* (compare vaccinate). The suffix -age, is a noun suffix, not a verb suffix, though we use "voyage" both as a substantive and as a verb. "Encourage" is justified by the *prefix* "en." I do not know, however, why we should not say "to mass," as we say "to pass" (from the French *passer*). "To masser" is of course wrong.

H. W. Mills, M.D., San Bernardino, Cal.

Answer.—Our intention in the note here referred to was merely to record usage, not to coin a new word. It is too late to introduce "massate," although this would correspond to the German *massieren*. To say "to mass" would be misleading. The Greek verb *μάσσω* by the way, means to chew or masticate. "Massage" is from the French, and its use as a verb is justified by the facility with which verbs are formed from nouns in English.

GAFFKY SCALE OR TABLE

To the Editor:—Please explain the Gaffky scale. Is it an instrument or a scheme?

S. C. E.

Answer.—The Gaffky scale or table is a classification of cases of tuberculosis according to the number of bacilli in the sputum. The following modified Gaffky table is recommended by Brown: 1. Only one to four bacilli in whole preparation. 2. Only one on an average in many fields. 3. Only one on an average in each field. 4. Two to three on an average in each field. 5. Four to six on an average in each field. 6. Seven to twelve on an average in each field. 7. Thirteen to twenty-five on an average in each field. 8. About fifty on an average in each field. 9. About one hundred on an average in each field.

Medical Economics

This Department Embodies the Subjects of Post-Graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

NEW MEDICAL PRACTICE ACT IN ARIZONA

The new medical practice act for Arizona creates a composite board of five members, to wit: two regulars, one homeopath, one eclectic and one osteopath. Three forms of certificates are provided for as follows; a certificate to practice medicine and surgery, one to practice osteopathy, and one to practice any other system of healing. All applicants must file the diploma of the school from which they graduated with the board and must submit to an examination in the fundamental subjects. The act does not provide for reciprocity. It specifies the procedure under which a charge of "unprofessional conduct" may be tried, and defines "unprofessional conduct." Treatment by prayer and the like is exempted under the act.

THE THREE HARRISON OPIUM BILLS

Shortly after the American occupation of the Philippines it was found that the people of these islands were suffering from the effects of opium. To eliminate trade in this drug the United States initiated a series of international commissions and conventions. which have culminated in efforts at world-wide legislation against the evil.

At the sitting of the International Opium Commission at Shanghai in 1909, it was found that the United States was open to considerable criticism for permitting the importation of smoking-opium during the fifty years prior to 1909. Not only that, but this country had collected approximately $27,000,000 of revenue thereon. The presentation of these facts to Congress brought about the passage of the opium-exclusion act of 1909.

This law, together with certain measures enacted at an earlier date, have proved themselves quite insufficient to suppress the opium trade. Hence, to perfect this apparently inadequate legislation, Representative Harrison of New York has introduced three measures into the Sixty-Third Congress. These are H. R. 1967, H. R. 1966 and H. R. 6282, all regulatory of the opium traffic.

H. R. 1967, the first of this series of three bills, is to amend the act of Oct. 1, 1890 (26 Stat., p. 1567), regulating the manufacture of smoking-opium within the United States. The bill is designed to impose so severe a tax on the manufacturers of smoking-opium as to discourage altogether their continuation in business. For this purpose, it raises the tax from $10 to $200 a pound and raises the bond required of manufacturers from $5,000 to $100,000. It also greatly increases the penalties for infractions of the law. It is substantially a reenactment of those provisions of the act of 1890, which cover the manufacture of smoking-opium within the United States. The chief difference is the great increase in the amount of the tax and in the penalties for the infringement of any of its provisions.

H. R. 1966, the second bill considered in the House of Representatives, deals with the international phase of the question. It is a reenactment of the opium-exclusion act of Feb. 21, 1909, with more drastic provisions. There is also a further provision absolutely prohibiting the exportation of opium from the United States under certain given circumstances. It was found that the old law only facilitated smuggling, which was carried on in a manner wellnigh defying proof of the offense. To obviate this, the proposed law shifts the burden of proof to the defendant to establish his innocence. Thus, hereafter, any one having smoking-opium in his possession in the United States will be required to show that it was imported prior to April 1, 1909. Again, transshipments of opium were being made in San Francisco. Such cargoes would eventually find their way into this country, overland, from Mexico. In the opinion of the attorney-general at the time, Mr. Wickersham, such a transferring of cargoes could not be prevented, as such a transshipment did not constitute an importation. The new law meets the difficulty by forbidding any one, within the jurisdiction of the United States, to bring any smoking-opium into this country on any vessel, railroad-car or any other vehicle fitted for transportation.

In this use of the term "vehicle," airships and the like, are not prohibited. For, the term, as defined in the Revised Statutes, includes only every description of carriage "used, or capable of being used, as a means of transportation *on land*." Just as "vessel" under the Revised Statutes, includes only every kind of water-craft. The Senate, however, may amend the bill to remedy this defect.

To control smuggling more fully this section also shifts the burden of proof. Hereafter, any person having smoking-opium in his possession, under such circumstances as the act sets forth, must prove that it was not obtained illegally. Penalties are provided for any violation of the law.

In Section 5 of this bill it is provided that smoking-opium is not to be admitted into the United States for transportation into other countries. In the House, the point was made that this language would not prohibit the introduction of opium into territories, such as the Philippines, for transportation into other countries. The section was therefore amended to read, "into the United States, or into any territory under the control or jurisdiction thereof."

From the commerce clause of the federal Constitution there flows, it would seem, the grant of police power authorizing Congress to prohibit absolutely the exportation of opium. Such a prohibition would seem to find parallels in the embargo act of 1807; in the regulations against the exportation of obscene literature, and other offensive matters through the mails; and again in the undoubted power of Congress to forbid "the shipment to any foreign country of any article of food, or drug, which is adulterated, or misbranded, etc. . . ." Moreover it would seem incontrovertible that a state may, under its police power, regulate such things as fall within its jurisdiction, and as are deleterious to the human family. On the same grounds, then, why may not Congress, under its express power "to regulate commerce among the several states and with foreign nations," control the exportation of an article which is deleterious to the human family internationally?

H. R. 6282 is the third and last of the series of bills attempting the control and regulation of the traffic in narcotics. Thereunder no sale of the so-called habit-forming drugs may be made, except by persons who have paid the special tax, and have registered with collectors of internal revenues. Forms are to be sold to the "bona fide" dealers in these drugs with their names stamped thereon, to be used in ordering their supplies, and no one may use these forms for this purpose but the person or firm to whom such were originally issued.

The act is to be construed not to apply to physicians, etc., dispensing such drugs in the course of their professional practice. But, a physician "shall personally attend upon" the patient to whom he is prescribing the drug. And, the measure does not cover a sale by a pharmacist on the written prescription of a physician. The prescription however must be "dated as of the day on which signed, and signed by the physician" who issued it. It must also be preserved by the druggist for "two years from the day on which it was filled." Nor does the bill cover a sale of these drugs by "any person" in this country to "any person" in a foreign country. Finally, it is provided that the act shall not apply "to the sale of preparations and remedies which do not contain more than 2 grains of opium, or more than ¼ of a grain of morphin, or more than $^1/_{12}$ of a grain of heroin, or more than 1 grain of codein, or any salt, or derivative of them in 1 fluidounce, or, if a solid or semisolid substance in 1 avoirdupois ounce; or to liniments, etc., prepared for external use only, except liniments, etc., which contain cocain, etc., or any synthetic substitute for them." But all such preparations, and the like, must be sold as remedies and not to evade the act.

In the debate over this section in the House it was admitted that it was a concession to the firms manufacturing proprietary medicines. An attempt was made to amend the section to reduce the percentage of the drugs one half. This was defeated because the leaders felt that any step toward the control of this traffic is better than none. Also that the passage of the bill would be more readily effected by compromising with these people for the present. Later, when the public becomes better educated, further legislation may be brought about which will control even this branch of the trade.

These three measures, according to Representative Harrison, constitute the redemption of our pledge to the world. All the nations that attended the opium convention were to assist in the abrogation of the traffic. The United States on the enactment of these bills into law, will have done its share. The three bills have passed the House of Representatives, and are now in the United States Senate, where they have been referred to the Finance Committee for its due consideration.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: San Francisco, August 5-8. Sec., Dr. Charles B. Pinkham, 135 Stockton St., San Francisco.

NEBRASKA: Lincoln, August 13-14. Sec., Dr. C. P. Fall, Beatrice.

Louisiana June Report

Dr. A. B. Brown, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, June 5-7, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 67, of whom 53 passed, 12 failed, and 2 withdrew. Three candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1913)	87.6
Atlanta School of Medicine	(1911)	77.4
Bennett Medical College	(1913)	84.4
University of Louisville	(1912) 80.6; (1913)	84, 85.8
Tulane University of Louisiana.	(1912) 81, 88.4, 90.4; (1913) 79, 79.7, 81.9, 83, 83.2, 83.2, 85, 85.1, 85.4, 85.5, 85.7, 85.7, 85.8, 86.3, 86.4, 86.5, 86.5, 87.2, 87.2, 87.4, 87.6, 87.6, 87.7, 87.8, 87.8, 88.1, 88.4, 88.5, 88.8, 88.9, 89.1, 89.5, 89.6, 89.8, 90.9, 91.2, 91.9, 91.9, 93.1.	
University of Tennessee	(1912)	77.8
Memphis Hospital Medical College	(1884) 78.9; (1912)	78.7
Vanderbilt University	(1912)	78.4
University of Berlin, Germany	(1912)	93.1

FAILED

College	Year Grad.	Per Cent.
University of Arkansas	(1911)	59.3
College of Physicians and Surgeons, Little Rock,	(1911)	50.3
Atlanta College of Physicians and Surgeons	(1913)	62.1, 64.6
Tulane University of Louisiana	(1898)	63.1
University of Tennessee	(1913)	62, 63.7
Memphis Hospital Medical College,	(1901) 51.4; (1911) 51.9; (1912) 64.5; (1913) 74.8.	
University of Nashville	(1913)	51.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1901)	Illinois
Columbia University	(1909)	N. Carolina
Jefferson Medical College	(1905)	Ohio

The following questions were asked:

ANATOMY

1. How many bones of the head? Name them. 2. Give origin, insertion and nerve supply of gluteus maximus, pronator radii teres, pectoralis major, latissimus dorsi and quadratus lumborum. 3. Describe the different valves of the heart. 4. Name the muscles that (*a*) flex, (*b*) extend, (*c*) pronate, (*d*) supinate, the forearm. 5. Name the vessels and nerves of the stomach. 6. Give the coverings of an oblique inguinal hernia. 7. Describe briefly the antrum of Highmore. 8. Name the germ layers from which the following structures develop: liver, stomach, nervous system, blood, hair. 9. Give origin, course and distribution of phrenic nerve. 10. Origin, course and distribution of sciatic nerve.

CHEMISTRY

1. What is the elementary composition of the proteids? 2. What is the test and reaction for indican in the urine? 3. What are the albuminoids and where are they found in the body? 4. What is the elementary composition of lactose, and how derived? 5. What is the salivary ferment and explain its action. 6. How does CO_2 act as a poison? 7. What are the characteristic properties of bases and acids relative to litmus paper? 8. What is understood by atomic weight? 9. (*a*) What is an unorganized ferment? (*b*) Give examples of unorganized ferments of the body. 10. (*a*) What is a carbohydrate? (*b*) Name some of the important carbohydrates utilized in the body.

PATHOLOGY

1. Describe the changes occurring in the blood in (*a*) splenomedullary leukemia and (*b*) pernicious anemia. 2. (*a*) By what gross pathological changes is arteriosclerosis recognized? (*b*) What are its histologic characteristics? 3. (*a*) Describe the *Ameba coli* (*b*) Tell what changes occur in the intestine due to amebic infection. 4. Describe the gross pathologic appearance of a tuberculous kidney. 5. (*a*) What are the various forms of sarcoma of long bones? (*b*) Tell which of these is the least malignant and why. 6. What is a cyst? 7. Describe the pathologic changes occurring in the lung in pulmonary tuberculosis. 8. What is the pathology of acute appendicitis, going on to suppuration? 9. What changes occur in joints following metastatic infection? 10. (*a*) Name the different forms of the malarial plasmodium. (*b*) Describe any one of them as it appears under the microscope.

PHYSIOLOGY

1. What are the essential structural elements composing, and what are the functions of, the sympathetic system? 2. Summarize the biliary functions of the liver. 3. How do carbon, oxygen, nitrogen and hydrogen, enter and leave the body? 4. What are the causative factors of the capillary circulation? 5. (*a*) Describe fully reflex action. (*b*) Give examples of superficial reflexes and deep reflexes. 6. What is understood by subjective sensation, by objective sensation; give examples of both forms. 7. What is the function of, and what parts are innervated by, (1) the recurrent nerve, (2) the spinal accessory, (3) the hypoglossal? 8. (*a*) What factors influence urinary excretion, (*b*) give examples of the modifying influence of diuretics on this excretion. 9. What are the organic and inorganic constituents of the saliva, and what are the factors which influence salivary digestion? 10. Give several examples of (1) carbonaceous foods, (2) nitrogenous foods, (3) carbo-nitrogenous foods.

OBSTETRICS

1. Describe the blood-supply of the uterus. 2. State the diameters of the pelvic outlet. 3. Divide pregnancy into three trimesters, and give the signs of pregnancy occurring in each period. 4. Define position, presentation and attitude. 5. How determine the prematurity of a child at birth? 6. Describe the prophylaxis of eclampsia, and the treatment of same at the eighth month. 7. Should the head fail to engage in the pelvic brim, how manage the case of labor? 8. Diagnose fetal syphilis. 9. Detail the immediate repair of a complete laceration of the perineum. 10. Differentiate placenta praevia from a premature separation of a normally implanted placenta.

GYNECOLOGY

1. Define pelvic hematocele and pelvic hematoma. 2. (*a*) Give the differential diagnosis between acute pyosalpinx and pelvic cellulitis. (*b*) Describe the treatment of pelvic cellulitis. 3. What are the remote results of laceration of the cervix and of the perineum (combined?) 4. Give the differential diagnosis between (*a*) hematocele of the vulva, (*b*) Abscess of Bartholin's gland and (*c*) pudendal hernia. 5. (*a*) Name the indications for abdominal hysterectomy. (*b*) Describe the technic of supravaginal hysterectomy. 6. What are the causes of amenorrhea? 7. Describe the technic of operation for closure of vesicovaginal fistula. 8. (*a*) Name the varieties of tubal gestation. (*b*) Describe the treatment of tubal gestation after rupture has taken place. 9. What are the indications for curettage? 10. What are the indications for the administration of the hot vaginal douche?

PHYSICAL DIAGNOSIS

1. Compare the associated attributes of sound as they occur on percussion, in an air-containing viscus and in an airless viscus. 2. What are the characteristics that differentiate rales from other adventitious sounds? 3. Define vocal fremitus, and state its significance in pulmonary disease. 4. Describe (*a*) vesicular and (*b*) bronchial breathing, and state in what condition the latter replaces the former. 5. What are the physical signs present in pleurisy with purulent effusion? 6. State the physical signs of a cavity of the lung in tuberculosis. 7. What characteristics of anemic murmurs distinguish them from true organic murmurs? 8. Name the causes of displaced apex-beat, and state the physical signs of one of the conditions mentioned. 9. Describe (*a*) Babinski's sign; (*b*) Kernig's sign; (*c*) Cheyne-Stokes respiration. 10. What physical signs would enable one to distinguish ascites from other abdominal enlargements?

THERAPEUTICS

1. Give antidotes for arsenic, carbolic acid, atropina, strychnin and chloral hydrate. 2. Describe the physiologic action and give the therapeutic use of digitalis. 3. What drugs would you use in acute articular rheumatism; write a prescription containing one. 4. Give the uses of ichthyol in medicine. How is it obtained? 5. What class of acids would you give in order to render alkaline urine acid? 6. Differentiate between apoplexy and opium poisoning. 7. What is ergot? What are its most pronounced physiological actions? 8. Give indications for the use of the following: nux vomica, arsenic, belladonna. 9. What is quinin? In what diseases is it used and how does it act? 10. What are diuretics? Explain their action and use.

HYGIENE

1. What diseases are carried by animals and insects? 2. What sanitary measures are needed to prevent the spread of bubonic plague? 3. State the composition of cows' milk, and the characteristics of each component. 4. How is milk adulterated, and state a method of identifying one of the adulterants named? What are fomites, and what rôle do they play in infectious diseases? 6. How is the mortality rate of a city computed? 7. How does the hookworm enter the human body and what is the prophylaxis of same?

8. What special hygienic care do pregnant and parturient women require? 9. What is the significance of nitrites and nitrates in drinking water? 10. Detail the hygienic care of a case of typhoid fever.

SURGERY

1. Give signs, symptoms, and treatment of tubercular hip-joint disease. 2. Give differential diagnosis between gall-stones, appendicitis, ulcer of stomach, and cancer of stomach. 3. What symptoms would lead you to believe that a hernia was strangulated? 4. What is cardiospasm; give symptoms. 5. What are the essentials of a good amputation? 6. Describe the technic of an intravenous infusion. 7. Name the surgical conditions that may cause indigestion. 8. Describe the process of repair of tissue. 9. Give treatment of acute suppurative osteomyelitis. 10. Give symptoms and treatment of fracture of the base of the skull.

Medicolegal

Treatment of Disease without Administering Medicine—What the Law Seeks

(Lewis vs. State (Tex.), 155 S. W. R. 523)

The Court of Criminal Appeals of Texas affirms a conviction of the defendant Lewis of the offense of practicing medicine without having registered his authority so to do, if he had any such authority, from the State Board of Medical Examiners. The court says that it was shown that he had treated and offered to treat paralysis, rheumatism, asthma, tonsillitis, kidney trouble, cancer, female trouble, stomach trouble, nervousness, abscess, neuralgia, and various other diseases, even to removing cataracts, etc., making specific charges for the treatment, but he earnestly insisted that, as he did not prescribe nor give medicine for the treatment of disease, he did not come within the provisions of the medical practice act, or if the act is so drawn as to include one who treats disease, otherwise than by administering medicines, then the act is unconstitutional. His counsel filed an able and extensive brief, but cited the court to no authorities as sustaining their contention, and the court has found none.

In the first place, the court wants to call attention to the fact that the medical practice act does not seek to regulate how any one shall treat diseases or disorders; it simply provides that, before any one shall treat, or offer to treat, diseases or disorders of the human family, he shall demonstrate that he is well grounded in certain studies named in the act. This is to compel a person to show he has a knowledge of the human frame, the organs of the body, and an ability to diagnose diseases, etc. If he shall pass this examination, then the treatment of disease is left to his judgment, and in no way does the act seek to control how any man shall treat disease. The misconception of the terms of the medical practice act has been the basis of much argument.

No one has an inalienable right to follow the occupation of practicing medicine or treating disease for pay any more than one has the inalienable right to follow the occupation of practicing law for pay, or to practice dentistry, or any other occupation that requires and demands a certain amount of what might be termed technical knowledge of the subject with which he represents he is competent to practice. Every question raised by the defendant in his brief has been so thoroughly discussed by this court in cases heretofore decided that the court deems it but useless to reiterate the law as therein announced, as the argument of his counsel has not caused it to change its views, as therein expressed.

Constitutionality of Ordinance to Secure Purity of Milk Shipped in from Outside of City

(Adams vs. City of Milwaukee (U. S.), 33 Sup. Ct. R. 610)

The Supreme Court of the United States affirms a judgment of the Supreme Court of Wisconsin sustaining the validity of an ordinance of the common council of the city of Milwaukee regulating the sale of milk. The court says that the ordinance provides that no milk drawn from cows outside of the city shall be brought into the city, contained in cans, bottles or packages unless they be marked with a legible stamp, tag or impression bearing the name and address of the owner of the cows, and unless such owner shall, within one year from the passage of the ordinance, file in the office of the commissioner of health a certificate of a duly licensed veterinary surgeon or other person given authority by the state live stock sanitary board to make tuberculin tests, stating that such cows have been found free from tuberculosis or other contagious diseases. The certificate is required to give a number which has been permanently attached to each cow and a description sufficient for identification. The certificate must be renewed annually and must show that the cows are free from tuberculosis or other contagious diseases.

The plaintiff contended that the ordinance violates the 14th Amendment to the Constitution of the United States because it discriminates between milk drawn from cows outside of Milwaukee and milk drawn from cows within the city, and therefore does not affect all persons alike. But inspection and care can be applied to the animals within the city, and it is applied also to the milk drawn from such animals. It cannot be applied to animals kept outside of the city. It can only be applied to the milk drawn from them. The Supreme Court of Wisconsin said: "There are brought into Milwaukee, from outside of the city, about 28,000 gallons of milk every day, drawn from more than 10,000 cows. It would be practically impossible to subject this quantity of milk to a microscopic examination, or to subject it to what is called in the evidence the centrifugal test, which would also require the use of a microscope, although not to the same extent. Each animal within the city can be subjected to an individual examination, a microscopic test of samples of its milk, an inspection as to its condition of health, and the tuberculin test applied directly under the orders of the health commissioner. This is a sufficient basis for separate legislation relating to milk shipped into the city." This court concurs in that conclusion.

The different situations of the animals require different regulations. Cows kept outside of the city cannot be inspected by the health officers; they can be inspected by a licensed veterinary surgeon and a certificate of the fact and identity of the cows and the milk authenticated as required by the ordinance. The requirements are not unreasonable; they are properly adaptive to the conditions. They are not discriminatory; they have proper relation to the purpose to be accomplished. That purpose and the necessity for it this court cannot question.

Nor does this court agree with the plaintiff's contention that the provision of the ordinance which requires milk that does not conform to its requirements to be confiscated, forfeited and immediately destroyed, takes his property without due process of law. He overlooked the allegation of his complaint, which was not that his cows are free from infectious or contagious disease, but only "so far as he is able to learn or discover." And the allegation of his willingness to withdraw tainted milk from sale depends on the same contingent knowledge or information. He overlooked also the findings of the courts against the sufficiency of his information, and their demonstration of the necessity of the tests established by the ordinace. But even if the necessity of the tests be not demonstrated and the beliefs which induced them may be disputed, they cannot be pronounced illegal. In Laurel Hill Cemetery vs. San Francisco, 216 U. S. 358, this court expressed the deference which must be accorded to local beliefs, saying that it would not overthrow an exercise of police power based on them to protect health merely because of its adherence to a contrary belief. It will be observed, therefore, that the contention of the plaintiff is without foundation, and that the ordinance is not an arbitrary and unreasonable deprivation of property in a wholesome food, but a regulation having the purpose of and found to be necessary for the protection of the public health.

The police power of the state must be declared adequate to such a desired purpose. It is a remedy made necessary by the plaintiff acting in disregard of the other provisions of the ordinance—that is, failing to have his cows tested and their milk authenticated, as prescribed. The city was surely not required to let the milk pass into consumption and spread its possible contagion. This seems to be the alternative for which plaintiff contended, and might occur. All milk produced outside of the city had amounted, the state supreme court said, to 3,500 eight-gallon cans daily. Criminal pains and penalties would not prevent the milk from going into consumption. To stop it at the boundaries of the city would be its practical destruction. To hold it there to await judicial proceedings against it would be, as the supreme court said, to leave it at the depots, "reeking and rotting, a breeding place for pathogenic bacteria and insects during the period necessary for noticé to the owner and resort to judicial proceedings."

This court agrees with that court that the destruction of the milk was the only available and efficient penalty for the violation of the ordinance. In other words, as the milk might be prohibited from being sold, at the discretion of the board of health, and even prohibited from entering the city, a violation of the conditions on which it might be sold involves as a penalty its destruction. The plaintiff sets up his beliefs and judgment against those of government, and attempts to defeat its regulations, and thereby makes himself and his property a violator of the law.

In North American Cold Storage Co. vs. Chicago, 211 U. S. 306, 315, this court said, by Mr. Justice Peckham, that food which is not fit to be eaten, "if kept for sale or in danger of being sold is itself a nuisance and a nuisance of the most dangerous kind; involving, as it does, the health, if not the lives, of persons who may eat it." And it was decided that in such case the food could be seized and destroyed, and that a provision for a hearing before seizure and condemnation was not necessary. It was also decided that the owner of the food had his remedy against the arbitrary action of the health officers. No decision is here rendered on the validity and effect of the provision in this ordinance that the health officers "shall be held harmless in damages" for their acts "if done in good faith." It may be that that portion of the ordinance is separable if invalid.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

July 1, No. 1, pp. 1-111

1 *Value of Course in Tropical Medicine for Training of Internist. E. R. Stitt, Washington, D. C.
2 *Physiologic Activity of Americans in Philippines. W. P. Chamberlain, Plattsburg Barracks, N. Y.
3 *Species of Anopheles that Transmit Human Malaria. F. Knab, Washington, D. C.
4 Prevalence of Intestinal Parasites in Philippines. E. S. Tenney, U. S. Army.
5 Adult Forms of Trypanosoma Americanum in Naturally Infected Animals. F. M Johns, New Orleans.
6 Surgical Treatment of Elephantiasis and Elephantoid States Dependent on Chronic Obstruction of Lymph and Venous Channels. R. Matas, New Orleans.

1, 2 and 3.—Abstracted in THE JOURNAL, June 7, pp. 1820, 1821 and 1822.

Annals of Surgery, Philadelphia

July, LVIII, No. 1, pp. 1-144

7 American Surgical Association: Its Influence on Growth and Development of American Surgery. C. A. Powers, Denver.
8 Fibromatosis of Stomach and Its Relationships to Ulcer and Cancer. A. Thomson and J. M. Graham, Edinburgh.
9 *Diagnosis and Treatment of Fractures Involving Knee-Joint. J. B. Blake, Boston.
10 *Analysis and Study of 724 Major Amputations. W. L. Estes, South Bethlehem, Pa.
11 *Snapping Hip (Hanche a Ressort; Schnellende Hüfte). J. F. Binnie, Kansas City, Mo.
12 Five Cases of Suture of Heart. F. T. Stewart, Philadelphia.
13 *Aneurismorrhaphy. G. T. Vaughan, Washington, D. C.
14 Arteriovenous Anastomosis for Threatened Gangrene of Foot. L. Freeman, Denver.
15 Sarcoma of Femur. W. B. Coley, New York.
16 Cancer of Thyroid, and Its Extension to Lungs by Means of Blood-Vessels. F. J. Shepherd, Montreal, Can.
17 Hygroma Cysticum Coli: Its Structure and Etiology. C. N. Dowd, New York.
18 Exclusion of Bladder, an Operation of Necessity and Expediency. C. H. Mayo, Rochester, Minn.

9. **Fractures Involving Knee-Joint.**—Blake states that the five principle traumatic bone lesions involving directly or indirectly the knee are influenced less than might be expected by the fact that they invade the largest joint in the body. Trauma affecting the knee-joint is sufficient to produce fracture, causes fracture of patella most frequently, of femur next in order, and of tibia least often; in patients under 20 years such trauma usually causes separation of the lower femoral epiphysis. With the exception of sepsis, the other complications added to fractures in this region are: (a) greater difficulty in maintaining position of fragments; (b) greater limitation of motion after union has taken place; (c) in certain operative cases, an added danger, that of invading a joint with a solid body. The indications for treatment are similar to those applicable to other fractures except that nonabsorbable materials should not be used within the limits of the knee-joint unless it is absolutely unavoidable, and the immobilization be practiced for a period longer than is advisable in fractures not involving joint cavities.

10. **Major Amputations.**—A comparative study of the earlier and later lists of amputations, Estes points out, shows that the clinician continues to regard the formerly adopted sites of preference the most desirable ones. The mediotarsal amputations have increased in number and have gained in favor against Syme's or the lower third of the leg amputations. Every increment of an extremity possible to save, without serious danger to the flaps and long disability of the patient should be retained. The exception to this is the upper third of the leg. It is better to amputate at the knee-joint than at this region. As regards the kind of flaps: for the forearm, anteroposterior flaps with the posterior one-quarter longer are preferred. All amputations of the arm, including those at the elbow, may be done by a circular or modified circular method. The adjustment of the flaps may usually be in an anteroposterior direction. The retraction of the anterior part of the flap at the elbow will convert a circular into an oval shaped flap, the posterior segment will be much longer. This will bring the line of union some distance above the end of the bone. At the shoulder-joint, also, anteroposterior flaps are preferred. The anterior flap includes the greater part of the deltoid muscle and is longer than the posterior one. The incision in the internal aspect of the extremity should be so placed as to give easy access to the axillary vessels, and they should be grasped and controlled as soon as practicable. Mediotarsal and tarsal amputations are preferred whenever practicable when amputation of the foot is required. It is especially necessary to obtain good, adequate flaps and cut the anterior tendons long enough to be secured by sutures to the posterior flap when forming the stump. Low down in the leg anteroposterior flaps are preferred but not the Teale method or any extraordinarily long anterior flap method. In other parts of the leg lateral flaps seem best.

At the knee-joint a long anterior and short posterior flap method is preferred. The patella may be removed or not, according to the conditions of the case. Lower third of the thigh to the hip-joint anteroposterior flaps with the anterior one longer are usually employed. Estes always shapes the flaps from without inward, never by transfixion. The average length of time in the hospital for amputation cases continues to be about twenty-two days. The mortality rate for single major amputations has been slightly decreased, viz., from 4.76 per cent to 4.36 per cent. The mortality-rate of double mixed amputations has been reduced from 23.68 per cent to 11.11 per cent. The combined mortality of the two series is 4.56 per cent. for the single amputations. This is a very low mortality-rate for the class of injuries which required these amputations. The important factors in lowering the mortality of amputations for injuries are. 1. Saving of blood. 2. Careful asepsis or antisepsis. 3. Discriminating when to operate. Operate as soon as the blood-pressure will permit. A systolic pressure below 80 should contra-indicate amputation.

11. **Snapping Hip.**—Binnie's patient complained of (1) A marked rubbing pain at the crest of right ilium when he carried a heavy weight. This had no relation to the occurrence of his second complaint. (2) When he jumped or carried a heavy weight there was an audible and palpable snapping at the right hip, which he attributed to the head of the femur becoming dislocated, and which he could produce voluntarily. When the patient leaned slightly to the right side the tip of the eleventh rib touched the iliac crest, causing a painful rubbing on motion. There was now tenderness at this point. This position of bending toward the right was often assumed in an endeavor to prevent snapping of the hip with its disagreeable sensation and feeling of weakness. When sustaining most of his weight on the right foot, knee extended, if the patient leaned toward his left, a thick band of tissue could be felt passing from the lower and anterior part of the trochanter major upward and backward toward the iliac crest. On extending the hip this band slid off the trochanter backward. If he twisted himself so that the right iliac bone moved forward the thickened band slipped forward on the trochanter with a sharp "snap," which was palpable, audible at several feet and the jerking movement of the band was quite visible. If the band was held backward with the fingers no "snap" occurred.

At operation it was found that there was a sausage-shaped thickening of the fascia posterior to the wound and to the great trochanter (the fascio-gluteal tract of Henlly). A flap of the periosteum was raised by longitudinal incision from the femur at the lower part of the trochanter major and the posterior lip of the incised fascia lata was sutured to this and to the vastus externus muscle near its origin. The anterior lip of fascia was sutured to the posterior in such a manner as slightly to overlap the original line of suture. The skin wound was closed and the limb fixed in splints. The patient was seen a month after operation, when he was able to work. There was no recurrence of the snapping.

13. **Aneurysmorrhaphy.**—Vaughan reports two cases. 1.—Left iliofemoral fusiform aneurysm; obliterative method, with ligation of the external iliac artery. Recovery. Death later. 2.—Popliteal aneurysm. Right side Reconstructive method. Recovery.

Archives of Ophthalmology, New Rochelle, N. Y.

July, XLII, No. 4, pp. 345-456

19 Parinaud's Conjunctivitis; Mycotic Disease due to Hitherto Undescribed Filamentous Organism. F. H. Verhoeff, Boston.
20 Hypophysis Disease (from Ophthalmologic Standpoint), with Report of Two Cases. E. Hill, Chicago.
21 Epibulbar Carcinoma; Histologic Examination of Specimen. G. E. de Schweinitz and E. A. Shumway, Philadelphia.
22 Toxic Amblyopia due to Tobacco Alone. M. L. Foster, New Rochelle, N. Y.
23 Ophthalmia in Form of Conjunctival Patches. F. Falchi, Pavia.

Boston Medical and Surgical Journal

July 17, CLXIX, No. 3, pp. 73-108

24 Certain Features of Work of Late J. Hughlings Jackson of London. J. J. Putnam, Boston.
25 Addison's Disease: Clinical and Pathologic Observations. G. M. Piersol, Philadelphia.
26 Experimental Production of Gastric Ulcers by Intravenous Injection of Clumped Colon Bacilli. E. C. Steinharter, Cincinnati.
27 *End Results of Operative Treatment in Thirty-Three Cases of Spastic Paralysis. H. E. Harris, Providence, R. I.
28 *Study of 197 Cases of Endocarditis in Children at Massachusetts General Hospital: with Special Reference to Treatment of Acute Endocarditis. L. W. Gilbert, Brooklyn.
29 Fracture of Carpal Scaphoid in Childhood and Adolescence. W. P. Coues, Boston.

27. **Operative Treatment in Spastic Paralysis.**—Excellent results in Harris' cases have followed subcutaneous tenotomies, whether they were zigzag or otherwise, and this has an important bearing on the question as to whether there is danger of permanent and undesirable lengthening of the tendo achillis after free division, and such conditions were especially looked for in the twenty-two cases discussed and none were noted. It would seem, therefore, that the open operation is not at all necessary. It also seems to Harris that alcoholic injections have not in the cases reported prevented the return of spastic contractures. Children who have not taken a step, have been able to walk as a result of simple division or resection of the adductors and ham strings, and apparently much can be expected from the Tubby procedure of transferring the pronator radii teres to work as a supinator. Although the operative procedure may be that properly suited to the individual case, Harris emphasizes that without careful after-treatment and the long continued after-use of plaster and apparatus the various operations are likely to be of little use.

28. **Endocarditis in Children.**—Gilbert claims that acute endocarditis should be considered as acute over a much longer period than has been the custom. Treatment should be carried out over months and perhaps years, until all possible signs of acute disease have disappeared, and even then, until adolescence is passed, at least a certain amount of restraint should be exercised.

California State Journal of Medicine, San Francisco

July, XI, No. 7, pp. 253-296

30 Intratracheal Insufflation Anesthesia. S. T. Pope, San Francisco.
31 *Recurrence of Hydrocele after Radical Treatment. D. Tait, San Francisco.
32 Nature of Disease. W. T. Councilman, Boston.
33 *Medical Treatment of Gall-Bladder Disease. D. Fulton, Los Angeles.
34 *Treatment of Tuberculosis with Soluble Vaccine. J. O. Hirschfelder, San Francisco.
35 *Why Does Cancer Attack Face. A. Davidson, Los Angeles.
36 Evolution in Study of Heart. H. I. Wiel, San Francisco.
37 *Stereo-Roentgenography in Pulmonary Tuberculosis. W. W. Boardman, San Francisco.
38 Two Cases of Cerebellar Disease Followed by Autopsy. W. F. Schaller, San Francisco.
39 Factors in Physiology of Bone in Relation to Surgery. A. L. Fisher, San Francisco.
40 *Arneth Blood-Count in Pulmonary Tuberculosis: Report of Eighty Cases. R. S. Cummings, Los Angeles.
41 Differential Diagnosis of Appendicitis and Nephrolithiasis M. Krotoszyner, San Francisco.
42 Skin Reaction after Cowpox Vaccination. J. N. Force, Berkeley.
43 Chronic Disease of Gall-Bladder and Appendix as Etiologic Factors in Production of Digestive Symptoms. W. F. B. Wakefield, San Francisco.
44 State Care for Crippled Children in California. D. C. McMurtrie, New York.

31. **Recurrence of Hydrocele.**—Although eversion is only a palliative measure and does not reach the determining factor, Tait says it will, when properly performed, prove eminently satisfactory in over 90 per cent. of hydroceles. The medium size, thin wall, chronic hydroceles are the most favorable for eversion. Longuet's method of eversion, without delivery of the sac, is the simplest, safest and least liable to recurrence. It frequently succeeds even in very thick wall hydroceles. A few symptomic hydroceles recur after eversion. Recurrence frequently results from failure to stitch the edges of the everted tunica vaginalis. .Andrews' bottle operation is a failure; it is a step backward in the history of the therapeutics of hydrocele, and its adoption accounts for a large proportion of the recurrences noted in this country. Excision is preferable to eversion in the rare cases of chronic pachyvaginalitis. The so-called total excision of the tunica vaginalis is not total, and recurrences following its use have been reported. Excision of the unopened hydrocele is the only complete method of removing the entire excreting surface. It has not been resorted to in thick walled hydroceles; in thin wall hydroceles it is an unnecessarily complicated procedure. Of the numerous objections made by conservatives to the radical treatment of hydrocele none resists either a thorough clinical or the experimental test. The protective rôle of the tunica vaginalis has been overestimated. Under strictly aseptic conditions experimental eversion of the tunica is not followed by atrophy of the testicle; it may produce a mild peritesticular sclerosis.

33. Treatment of Gall-Bladder Disease.—Perhaps in no other abdominal conditions, says Fulton, is complete rest more indicated than following acute manifestations of gall-bladder disease. Following acute cholecystitis and even after gallstone colic, it is well to keep the patient in bed for several days after each attack, and after all inflammatory manifestations have passed off, and until no tenderness on pressure over the gall-bladder remains, a period which may extend from days to weeks, according to the severity of the case. By more careful insistence on rest, chronicity of the disease may frequently be avoided.

34. Soluble Vaccine in Tuberculosis.—For about a year and a half Hirschfelder has conducted experiments in the hope of obtaining an extract of the endobody of the *Bacillus tuberculosis*. Such a substance was derived from the digestion of the bacillus with pepsin. The living bacillus was treated with acidulated pepsin at 38 degrees, the action of the ferment stopped with alkali and the solution filtered through a Pasteur filter. It was found that pancreatin did not work quite as satisfactorily. The extract was repeatedly standardized on tuberculous guinea-pigs, and after an absolutely reliable preparation had been made and the method perfected so that the dosage could be accurately determined, a number of cases of tuberculosis were treated. The results have been very encouraging, but the number of cases has been too small and the duration of the observation too short to permit more than this provisional announcement of the method for the present. In none of the patients treated were any unfavorable effects noted. Rapid improvement has been observed both subjectively and objectively, the roentgenogram showing the clearing up of the tuberculous deposits in the lungs. Several cases with tuberculous laryngeal ulcers have been observed, and in all of them rapid healing of the ulcers has been noted by the laryngologist. Bone tuberculosis of years' standing has been seen to improve and the progress has been recorded by the roentgenogram.

35. Why Does Cancer Attack Face?—Davidson's theory is that those regions are most subject to rodent ulcer that are least mobile, and consequently least vitally nourished. The growth of the beard or the use of the razor stimulates the functional activity of these parts. The cheeks are active in mastication; the upper lid does practically all the dusting of th eyeball. The cutaneous structures at the corner of the eye, the nose itself, the ears and malar prominences have no underlying muscles, no mobility, no stimulation to activity. If the abortive gland theory is correct, Davidson says, both sexes ought to be equally affected, but according to his figures only 12 per cent. were found in women. This disparity between the sexes he accounts for in part by the greater care expended on the face by women. The copious use of facial creams, frequent massage, etc., maintain a greater vitality in the skin. Then, too, women are endowed with an extra layer of adipose that still further maintains the tonicity of the skin. The more degenerate, or less vital the structure, the more the liability to cancer. In the general atrophy of the skin incidental to old age, those places devoid of all subcutaneous mobility are most liable to rodent ulcer. That seems to Davidson the most plausible explanation of the peculiar distribution of facial cancer.

37. Stereo-Roentgenography in Lung Tuberculosis.—Boardman thinks he is justified in saying that the small pendulous heart, calcified cartilages, narrow interspaces and excessive sloping of the ribs, are not only valueless, but are absolutely misleading, if considered as positive signs in the roentgenographic diagnosis of pulmonary tuberculosis. The hilus shadows and the fine markings in the lung fields, he regards as composite shadows cast by the bronchi, by the blood-vessels with their contained blood, and by the fibrous and lymphatic tissues accompanying these structures. Pulmonary tuberculosis produces alterations in these shadows as seen in stereoroentgenograms which he believes to be characteristic of this disease. And finally, that there can be no doubt of the great value of stereo-roentgenography as an aid in the diagnosis of pulmonary tuberculosis and other pulmonary affections when considered in connection with the history and physical examination.

40. Arneth Blood-Count in Lung Tuberculosis.—As the result of his study of eighty cases Cummings concludes that the Arneth count has no diagnostic value but assists in prognosis only. In extensive tuberculous inflammation of the lungs there is an increase of the neutrophil leukocytes containing one, two and three nuclei at the expense of those containing four and five nuclei. As a patient becomes worse the index gradually becomes higher. As a patient improves his index gradually becomes lower. An index over 75 as a rule is found in patients with a bad prognosis. Cummings says that if one follows the Arneth count absolutely he will frequently find himself mistaken, but it will be found of positive value in questionable cases as corroborative evidence only.

Canadian Medical Association Journal, Toronto

July, III, No. 7, pp. 548-642

45 Fractures and Their Treatment. J. A. Hutchison, Montreal.
46 Congenital Hypertrophic Pyloric Stenosis. R. E. McKechnie, Vancouver, B. C.
47 Endocarditis in Influenza: Report of Case. J. H. McPhedran, Toronto.
48 Responsibility for Advanced Case of Tuberculosis. C. H. Vrooman, Kamloops, B. C.
49 Aneurysm of Posterior Tibial Artery, Rupture of Sac: Operation by Matas Method. A. Primrose and T. D. Archibald, Toronto.

Colorado Medicine, Denver

July, X, No. 7, pp. 205-228

50 Treatment of Pott's Disease of Spine. G. B. Packard, Denver.
51 Treatment of Lateral Curvature of Spine. H. W. Wilcox, Denver.
52 Problem of Mental Defective. R. F. Darnall, Pueblo.
53 Device for Intestinal Anastomosis without Suture. F. N. Cochems, Salida.
54 Closure of Abdominal Wound after Celiotomy. W. W. Grant, Denver.

Delaware State Medical Journal, Wilmington

June, IV, No. 7, pp. 1-26

55 Cesarean Section in Preference to High Forceps in General Practice. W. Linn, Wilmington.

Illinois Medical Journal, Chicago

July, XXIV, No. 1, pp. 1-84

56 Stenosis of Pylorus in Infancy. C. L. Scudder, Boston.
57 *Cause of Bronchial Asthma. R. H. Babcock, Chicago.
58 *Phlebostasis; New Treatment for Broken Heart Compensation. S. Lilienstein, Bad Nauheim, Germany.
59 *Relief of Metatarsalgia. W. Van Hook, Chicago.
60 Topography of Tympanic Cavity. J. A. Cavanaugh, Chicago.
61 Economic Condition of Profession. C. J. Whalen, Chicago.

57. Cause of Bronchial Asthma.—In every case of asthma, Babcock says, search for some focus of chronic infection in the nasal accessory sinuses, in a chronic hyperplastic ethmoiditis, or in some closed cavity in any other part of the body, and finding it, advise its removel by surgical interference. If the absorption of a foreign protein can be prevented in this manner, it is likely that the asthmatic seizures will be prevented or greatly ameliorated. Of course, in cases of asthma traceable to animal or vegetable emanations or to some article of food to which the person has become sensitized, we can do no more than advise avoidance of exposure to the exciting cause. Nevertheless, the understanding of the etiology of this distressing malady certainly gives us a basis for rational and effective therapeutics in many instances that otherwise might go on unrelieved.

58. Phlebostasis.—The "phlebostat," which Lilienstein has devised as an adjunct in the treatment of weakened heart action, consists of two hollow cuffs, as they are used with a tonometer; of a manometer and a rubber bulb. A cuff is placed around each upper arm. These cuffs are connected by a tube and into them air is pumped by means of the bulb. A pressure of 80 to 100 mm. mercury is usually sufficient. At this pressure the pulse is not entirely obliterated, only the venous flow from the arm is retarded, with the result that a peripheral congestion ensues. After one or one and one-half minutes, the air is allowed to escape, and this procedure is repeated four or five times in succession, so that the treatment takes about ten minutes. The "phlebostat" may be applied, according to the condition of the heart, every day or every other day. In patients suffering from cardiac dyspnea, full feeling in the head, feeling of oppression, etc., a marked improvement is immediately felt. The patients assert that they breathe more freely, that they feel lighter, the oppressing feeling in the head disappears, etc.

59. **Relief of Metatarsalgia.**—The relief of early discovered cases of this disease, Van Hook says, may sometimes be effected by changing the poor shape and style of shoe to one of a broad, thick-soled, low-heeled type. But the final remedy lies, in difficult cases, in the excision of the branches of the plantar nerve which are affected by the pressure. The excision may be effected by opening over each affected branch of the nerve: but a single incision can sometimes be used for two branches. Van Hook calls attention to the fact that these nerves should be attacked at a point beneath the proximal extremities of the metatarsal bones. A single incision at this point gives an excellent opportunity to attack the nerve before its final major divisions have taken place. Furthermore, the incision at this point does not leave a scar where pressure can subsequently cause irritation and suffering. Hyperesthesia frequently follows these operations for some months. But, as a rule, the discomfort disappears and comfortable function is restored.

Journal-Lancet, Minneapolis

July 15, XXXIII, No. 14, pp. 389-416

62 University of South Dakota. C. P. Lommen, Vermillion, S. D.
63 Co-Relation of Appendicitis, Mucous Colitis and Membranous Pericolitis. A. E. Benjamin, Minneapolis.

Kentucky Medical Journal, Bowling Green

July 1, XI, No. 13, pp. 529-598

64 Anesthesia and Anoci-Association. G. W. Crile, Cleveland.
65 Value of a Purpose. H. W. Browder, Franklin.
66 Blood-Pictures in Tuberculosis. E. M[illegible]s, Sulphur.
67 Influence of Climate in Treatment of Tuberculosis. N. Evans, Murray.
68 What Is Tubercle of Tuberculosis? C. H. Todd, Owensboro.
69 What Caused It and How Prevent It? E. A. North, Newport.
70 Early Diagnosis of Tuberculosis. J. C. McCreary, Cave City.
71 Roentgen-Ray as Diagnostic Agent. W. E. Irvin, Owensboro.
72 Cyst of Pancreas, with Report of Case. S. B. Marks, Lexington.
73 Cervical Lacerations. J. O. Jenkins, Newport.
74 La Grippe. H. C. Chance, Cumberland Gap.
75 Cardiac Hypertrophy and Renal Diseases. J. E. Wilson, Butler.
76 Rational and Practical Sanitation and Hygiene. W. G. Kingsolving, Eddyville.
77 Diagnostic Significance of Blood-Pressure. V. Blythe, Paducah.
78 Gonorrhea of Female. J. S. Johnson, Barlow.
79 Pellagra. H. P. Sights, Hopkinsville.
80 Urologic Aspect of Microscope as Localizer of Disease. C. L. Wheeler, Lexington.
81 Salvarsan, a Specific, in Treatment of Pellagra. B. C. Rose, Bryantsville.
82 Malaria. R. T. Hocker, Arlington.
83 Abortion. S. M. Hopkins, Gardnersville.
84 Exophthalmic Goiter. O. W. Brown, Lenoxburg.
85 Intestinal Toxemia of Childhood. L. C. Redmon, Lexington.
86 Abortion. F. D. Haston, Arjay.
87 Asthma. J. E. Fox, Marion.
88 Volvulus. S. P. Oldham, Sorgho.
89 Ear-Ache, Cause and Treatment. W. J. Thomasson, Newport.
90 The Food We Eat. T. A. Frazer, Marion.

Medical Record, New York

July 19, LXXXIV, No. 3, pp. 93-138

91 Short Study of Career of Paracelsus. R. C. Newton, Montclair, N. J.
92 *Experiences with Abderhalden Test in Diagnosis of Pregnancy. J. Gutman, Brooklyn, and S. J. Druskin, Manhattan, N. Y.
93 *Bowel Doormaker: with Description of Technic of Operation for Short-Circuiting Bowel. R. T. Morris, New York.
94 Mental Morbidities of Conjugal State. T. H. Kellogg, New York.
95 Unusual Case of Renal Hematuria. W. G. Vincent, New York.
96 Castration and Operations for Varicocele and Hydrocele without Wounding Scrotum. C. A. Bucklin, Glasgow, Scotland.
97 Hemorrhoids and Office Practice. E. C. Beck, New York.
98 Leprosy and Knife. E. S. Goodhue, Holualoa, Hawaii.
99 Administration of Oxygen to Fetus. G. P. Shears, New York.

92. **Abderhalden Test in Diagnosis of Pregnancy.**—Reviewing their results and comparing them with those obtained by the majority of investigators, the authors found that the Abderhalden test is perfectly reliable and commendable. Schimpert and Hendry in their last group of seventy-nine cases obtained perfect results, Henkel in forty cases reports perfect results, Abderhalden's 200 cases, only one discrepancy, McCord's 240 tests with practically no failure, and a number of such other reports certify as to the value, reliability and utility of the test, provided the latter is performed by competent workers and strictly in accordance with prescribed rules. That the test is of inestimable value in pregnancy (especially in its differential diagnosis) has now been fairly well established, but its usefulness is not limited to pregnancy. Indeed, the field of usefulness of this serologic method of diagnosis seems at present exceptionally promising. Ferments seem to be the active agencies in the destruction of tissues in a great number of diseases, such as carcinoma, fevers, eclampsia, diseases with exudates, with parenchymatous degenerations, etc., and low dialyzable proteins have already been found in the serums of those affected with these disturbances. This fact has already been utilized by some of the workers mentioned previously in the diagnosis of nephritis, myxedema, Basedow's disease, syphilis, etc. Epstein reports most interesting results of his experiences by means of the Abderhalden serologic test in the diagnosis of carcinoma, citing perfect findings in a considerable number of cases. To a certain extent the test is objectionable because somewhat complicated and attended with some difficulties, its performance being therefore necessarily limited to special laboratories. The simplification of the test is desirable, so that it can be placed within reach of every practitioner. The authors have begun an attempt toward such simplification and have so far succeeded in making from placental tissue an active and durable extract, which will be enclosed in specially shaped dialyzers, and the rest of the procedure so modified as not to require special qualifications on the part of its performer. As they have not as yet sufficiently completed their experimentations, Gutman and Druskin postpone its announcement until a later date.

93. **The Bowel Doormaker.**—The doormaker used by Morris is an instrument for saving time, avoiding hemorrhage and lessening the degree of peritoneal soiling in an operation for short-circuiting the bowel. The instrument is 12 inches in length, carrying one blade, which is fenestrated, and another blade in the form of a blunt wedge which fits into the fenestrum (fenestrum 2½ inches long). The blades are bent away from the long axis of the shank at an angle of thirty degrees, for the purpose of avoiding pressure on the sacral promontory. When used for short-circuiting the bowel this instrument is passed into the rectum after wrapping the handle in a temporary sleeve of gauze or rubber dam. The object of the sleeve is to prevent the bowel mucosa from slipping between the shafts of the handle and becoming pinched accidentally. When the doormaker is in the rectum a customary opening is then made in the midline of the abdomen, just above the pubes, for purposes of bowel manipulation. The distal part of the ileum and the distal part of the sigmoid colon are brought into the abdominal incision together, the doormaker is pushed gently up to this point by an assistant and is then opened. The fenestrated blade remains in the rectum or distal part of the sigmoid bowel, while the wedge blade is passed through a puncture in this part of the colon and also through a corresponding puncture in the wall of the ileum. The jaws of the instrument are then snapped together and held together by an ordinary locking device on the handle. A narrow strip of wall of ileum and of wall of colon are deprived of blood-supply when wedged into the fenestrated blade by the wedge blade. A few Lembert sutures, at points where they are seen to be needed, will suffice to prevent leakage from the punctures in the walls of the ileum and colon.

The next step consists in angulating the ileum at a point situated near to but distally from the doormaker, for the purpose of turning contents of the ileum toward the door subsequently. Sutures are introduced for the purpose of making this angulation permanent. The sigmoid colon is angulated at a point situated near to and proximally from the doormaker, for the purpose of preventing antiperistalsis from carrying rectal contents back into the colon subsequently. Sutures are introduced for the purpose of making this angulation of the sigmoid permanent like that of the ileum. The abdominal incision is closed. Neither the ileum nor the sigmoid colon are angulated to the point of causing obstruction If reversed peristalsis is excited by the angulation—before the door has become opened—it can be quieted by the employment of opium. At the end of forty-eight hours the handle of the instrument, which protrudes from the rectum, is pulled on gently to determine if the wedge jaw has cut its way through the bowel walls. When it has done this the instrument is removed, the door having then been completed between ileum and colon by saprophytic or digestive destruction of the tissue which was wedged into the fenestrum and deprived of its blood-supply. Patients complain about the presence of the instrument in the rectum, but this complaint is less than the complaint about general distress after the more severe operative work of the Lane operation. After the door has been made there are many bowel movements daily for a while, because of the comparatively small new storage room of the rectum, and because the rectum is not accustomed to receiving contents directly from the ileum. Patients will complain about the frequent bowel movements. Starch enemas soothe irritated rectal mucosa, and bowel movements after a while drop down to one, two or three daily—varying with different patients.

New York Medical Journal

July 19, XCVIII, No. 3, pp. 109-156

100 Case of Dementia Praecox with Autopsy. C. W. Burr, Philadelphia.
101 Internal Secretions as They Concern Gynecologist. S. W. Bandler, New York.
102 Faculty of Paris in Seventeenth Century. F. Baker, Washington, D. C.
103 Sense of Smell as Aid in Diagnosis. R. E. Coughlin, Brooklyn.
104 Creating False Motor Paths. M. Strunsky, New York.
105 Tuberculosis in United States Army: Admission Rates for Seventeen Years. I. W. Brewer, Taughannock Falls, N. Y.
106 Causes of Crime. P. E. Bowers, Michigan City, Ind.
107 Diabetes Mellitus: Treatment with Bacillus Bulgaricus Cultures. J. W. Beveridge, New York.
108 Suggested Improvement in Allis Ether Inhaler. N. Du Val Brecht, Washington, D. C.

Oklahoma State Medical Association Journal, Muskogee

July, VI, No. 2, pp. 63-102

109 Lights and Shadows in Practice. S. H. Landrum, Altus.
110 Intestinal Obstruction. W. E. Dicken, Oklahoma City.
111 After-Treatment of Infantile Paralysis. W. G. Brymer, Dewar.
112 Schistosomiasis. J. C. Johnstone, Lawton.
113 *New Procedure for Relief of Retroverted Uterus. J. F. Kuhn, Oklahoma City.
114 Childhood as Factor in Profession of Medicine. E. F. Hayden, Tulsa.
115 Obstetric Ideals in Rural Practice. D. L. Garrett, Altus
116 Amputation of Thigh of Patient 108 Years of Age, Followed by Recovery. F. S. Clinton, Tulsa.

113. New Procedure for Retroverted Uterus.—The following method of procedure is advocated by Kuhn. The pampiniform plexuses are both ligated. The ligatures are placed at the pelvic border first and firmly tied in front, leaving long ends of sutures, which are clamped. Next, ligatures are placed at the uterine border, tied in front, and the long ends clamped. The engorged veins are now incised and the static blood expressed. Then the opposite side is treated in like manner. The result of this first step is to draw the uterus forward in the pelvis and leave the infundibulo-pelvic ligaments greatly relaxed. So the logical second step is the plication of these ligaments. This is accomplished as follows: An incision is made on the anterior border of the broad ligament over the infundibulo-pelvic ligament, exposing it for about 1½ inches, or as much as will be necessary to take up the slack. A running suture is so placed that when drawn tight and tied it will fold the ligament and hold it firmly. A purse-string suture is now placed in the peritoneal incision. If these steps are carefully done, no raw surfaces will be exposed and no hematomas will result. The uterus now lies in its normal position and it cannot be forced into the culdesac to stay, always easily righting itself, and it will remain in its normal position long enough for intra-abdominal pressure to exert itself normally and do its part in affording permanent support.

Philippine Journal of Science, Manila

April, VIII, No. 2, pp. 67-156

117 *Bone Lesions of Small-Pox. W. E. Musgrave, A. G. Sison and B. C. Crowell, Manila.
118 Status Thymico-Lymphaticus Among Filipinos. B. C. Crowell, Manila.
119 *Primary Sarcoma of Small Intestine. R. W. Hammack, Manila.
120 Tumors of Hypophysis Cerebri. J. S. Hilario, Manila.
121 Outbreak of Plague in Manila during 1912. V. G. Heiser, Manila.
122 Plague Outbreak in Iloilo. C. Fox, Manila.
123 Some Carbohydrate Reactions of Dysentery Bacillus. C. S. Butler, Canacao.
124 Isolation of Diplococcus Intracellularis Meningitidis (Weichselbaum) from Case of Cerebrospinal Meningitis in Native of Philippines. D. G. Willets and O. Schobl, Manila.
125 *Duration of Passive Immunity against Tetanus Toxin. E. H Ruediger, Manila.
126 Appendicitis. P. K. Gilman, Manila.

117. Bone Lesions of Small-Pox.—Twelve cases were studied by the authors. Skiagrams were taken of the affected bones and joints, and in one case a post-mortem examination was made. In this preliminary report they stated that "One of the most striking features of the deformities is the constant location of the lesions in the upper extremities." Further study has shown this statement to be an error. Any of the bones and joints of the body may be affected. However, the long bones and their articulations are more frequently affected than are other bones and joints. In the order of frequency, the following locations of the lesions were noted: (1) the bones and joints of the upper extremity; (2) of the lower extremity; (3) of other parts of the body. The bones of the upper extremity may be involved in the following order of frequency: (a) Forearm (radius and ulna); (b) arm (humerus); (c) hand (carpal, metacarpal and phalanges—proximal and distal.

The bones of the lower extremity may be involved in the following order: (a) Leg (tibia and fibula); (b) thigh (femur); (c) foot (tarsal) metatarsal and phalanges—proximal and distal). In regard to age, the bone lesions usually are observed in persons with a history of having had small-pox during early childhood, but the deformity may follow variola contracted at any time before the complete ossification of the bones. The greatest age at which such a complication of variola has been observed occurred in a boy 14 years old. The close resemblance in the character of the deformities, their constant association with a history of small-pox during early life, and the absence of similar lesions under other conditions seem to warrant the conclusions that the deformities are a complication of variola.

Summarizing the conditions in the bones, it is apparent that the diaphyses of the bones are shorter than normal and that the ends of the bones, representing the original epiphyses, are much altered in configuration. In the shafts of the bones which were removed for examination there was no apparent change from normal in contour or diameter. Mesial longitudinal section through the ends of the bones showed complete ossification of the epiphyseal extremities, and no indication of the line of junction between the epiphyses and diaphyses was present. The deformities of the epiphyses must, therefore, have occurred before the period of full growth and the interference with the longitudinal growth of the diaphyses must have been due to some disturbance at the line of junction with the epiphyses. The microscopic examination of the bones showed nothing which would further elucidate the nature of the active process. Complete ossification had taken place, and decalcified sections of the bones showed no alterations from the normal condition of bone growth at this period of life. The epiphyseal line of growth was obliterated and the compact bone and marrow bore normal relations. The only alteration was in the size and conformation of the epiphyses.

119. **Primary Sarcoma of Small Intestine.**—Three cases of primary sarcoma of the small intestine are analyzed by Hammack. Of the types of sarcoma found, lymphosarcoma is the most frequent, but spindle-cell, round-cell and melanosarcomas as well as endotheliomas occur. The tumor most frequently occurs as a spreading, infiltrating growth, completely or nearly encircling the intestine, but may occur as a polypoid mass projecting into the lumen. The growth is usually confined to the intestinal wall, leaving the serosa intact. Ulceration, on the other hand, is frequent and may cause perforation. It is remarkable, however, that very extensive infiltration of the intestinal wall, including the mucosa, can take place without ulceration. Dilatation is more frequent than stenosis. This is apparently due to the wide-spread infiltration and destruction of the muscular coats with possibly the additional factor of accumulation of intestinal contents on account of the absence of peristalsis. The annular form of the tumor, however, can cause constriction. When complete obstruction occurs, it is most often by direct extension from the metastatic growths in the lymph-nodes. All of the cases presented by Hammack have been lymphosarcomas, and all have exemplified the annular form, while one shows the infrequent condition of stenosis. In all there have been metastatic growths in the abdominal lymph-nodes with more or less wide-spread extension from these. In but one case, in which there was a small nodule in the heart, was there metastasis beyond the abdomen.

125. **Immunity against Tetanus Toxin.**—Ruediger found that the subcutaneous injection of 1,500 units of antitetanic serum from horse into horse confers passive immunity of between six and eight weeks' duration. Guinea-pigs subjected to repeated inoculations with antitetanic serum from the horse do not acquire a tolerance as is shown by the longer period of immunity. After repeated injections of normal horse-serum into guinea-pigs, passive immunity, following the injection of antitetanic serum from the horse, is of longer duration than it is in untreated guinea-pigs.

Southern Medical Journal, Nashville

July, VI, No. 7, pp. 423-492

127 *Diagnosis of Malaria. G. E. Henson, Jacksonville, Fla.
128 *Incidence of Malaria in Puerperium. J. V. Freeman, Jacksonville, Fla.
129 *Some Mooted Points on Feeding of Infants. J. D. Love, Jackville, Fla.
130 Pellagra in Canal Zone: Its Etiology and Treatment. W. E. Deeks, Ancon, C. Z.
131 *Treatment of Plague. I. I. Leman, New Orleans.
132 Eugenics. F. R. Harris, Henderson, N. C.
133 *Roentgenograph as Aid to Diagnosis and Treatment of Gastro-Intestinal Lesions. H. P. Cole, Mobile, Ala.
134 Etiology and Treatment of Cystitis in Women. F. W. Griffith, Asheville, N. C.
135 Pyelitis as Clinical Entity. P. I. Nixon, San Antonio, Texas.
136 Chronic Nasal Diphtheria. C. M. Miller, Richmond, Va.
137 Plea for Medical Ethics and Remonstrance Against Contract Practice. E. T. Camp, Gadsden, Ala.

127, 128.—Abstracted in The Journal, Nov. 30, 1912, pp. 1999 and 2000.

129. **Feeding of Infants.**—Concerning infant feeding, Love says, "the more you read about it the more confused you are likely to get, for, it must be confessed, much that has been written on the subject serves only to darken counsel." He adds that the physician who has a system of infant feeding that is yielding him satisfactory results need be in no hurry to make a change. It is, however, necessary that the physician should understand at least the chemical composition of any food he administers; that he should be able to alter the relative composition of the constituents to the varied conditions of a child; that he should acquire such a familiarity with his system of feeding that he may be able correctly to interpret any phenomenon of digestion and adapt his system to the exigencies of the occasion. The physician who can do this is following a system that cannot be improved on, and until there is a clarification of the haze of ideas which now envelop us, until a definite proved plan of feeding is devised, will, if properly understood and adapted to the varied conditions of a child's digestion, yield better results than the most perfect system in vogue, if inadequately mastered and imperfectly handled.

131. Abstracted in The Journal, Dec. 14, 1912, p. 2182.

133. **Roentgenograph in Gastro-Intestinal Lesions.**—Cole is convinced that the roentgenoscopy of the gastro-intestinal tract offers the greatest modern aid to the clinical diagnosis of lesions of these viscera, and accurate knowledge of the modern views of the gastro-intestinal topography and its motor phenomena should to a large extent obviate the necessity for exploratory surgery. This will assuredly facilitate the establishment of sound surgical procedures for the relief of many hitherto vague pathologic lesions of the gastro-intestinal tract.

Tennessee State Medical Association Journal, Nashville

July, VI, No. 3, pp. 95-128

138 Anoci-Association with Special Reference to Abdominal and Exophthalmic Goiter Operations. G. W. Crile, Cleveland.
139 Treatment of Endometritis and Salpingitis. J. H. Carter Memphis.
140 *After-Treatment of Surgical Cases. L. E. Burch, Nashville.
141 Disposal of Dead. S. M. Miller, Knoxville.

140. Abstracted in The Journal, April 19, p. 1249.

West Virginia Medical Journal, Wheeling

July, VIII, No. 1, pp. 1-36

142 Syphilis in Light of Modern Knowledge. V. C. Pedersen, New York.
143 Cesarean Section. H. H. Carr, Fairmont.
144 Roentgen-Ray and Its Possibilities in Scientific Research. R. H. Pepper, Huntington.
145 Albuminuric Retinitis of Pregnancy. L. C. Covington, Charleston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

June, VII, No. 2, pp. 183-338

1 Final Report of Luangwa Sleeping Sickness Commission of British South Africa Company, 1911-1912. A. Kinghorn, W. Yorke and L. Lloyd.
2 Non-Identity of Trypanosoma Brucei (Plimmer and Bradford, 1899) with Trypanosome of Same Name from Uganda Ox. J. W. W. Stephens and B. Blacklock.
3 Sex and Age of Africans Suffering from Trypanosomiasis. J. L. Todd.
4 Identification of Pathogenic Entameba of Panama. S. T. Darling.
5 New Tsetse Fly from Congo Free State; and Occurrence of Glossina Austeni in German East Africa. R. Newstead.
6 Examination of Root of Ipomoea from Rhodesia. P. H. Marsden.

Bristol Medico-Chirurgical Journal

June, XXXI, No. 120, pp. 97-192

7 Course of Pernicious Anemia in Older Persons. J. M. Clarke.
8 Methods of Diagnosis in Gastric Cancer. J. M. Fortescue-Brickdale.
9 *Paroxysmal Edema of Lungs. C. E. S. Flemming.
10 Two Cases of Urinary Calculus. C. A. Moore.
11 Urinary Products of Intestinal Intoxication. G. H. Almond.
12 Recent Cases of Epidemic Cerebrospinal Meningitis. J. R. Charles.
13 Serous Pleurisy due to Pneumococci and Tubercle Bacilli. F. H. Edgeworth.
14 What Is An Accident? C. Corfield.
15 The Tuberculosis Officer and His Work. L. J. Short.
16 Third South Midland Field Ambulance. A. W. Prichard.

9. **Paroxysmal Edema of Lungs.**—In twenty-seven years' private practice Flemming has recognized four cases. He describes the condition as follows: The attack most often commences with some irritation in the throat, tickling and feeling of dryness with slight cough, and the patient has a vague fear of some serious happening. In later attacks this fear amounts almost to terror. He cannot, dare not, lie down; breathing at once becomes rapid, the face looks anxious and is pale. There is generally, but not always some cyanosis

with the pallor. The skin is cold and moist; there is a sense of suffocation: breathing is oppressed and urgent; cough grows more distressing, and there is some expectoration of frothy coagulable fluid, which is frequently blood-stained; the chest is rapidly filled with noisy râles; the pulse is small and quick; breathing becomes more distressing; expectoration at times becomes more profuse, but this is not by any means always the case.

This condition continues for, perhaps, half an hour or an hour and a half. Gradually the breathing becomes deeper, easier and quieter, the pulse is fuller and less rapid, the skin resumes its normal color and warmth; the patient, though exhausted, is thankful for the relief, but too nervous of a return of the symptoms to sleep soundly. Air now enters the chest freely, but râles persist over the greater part of one or both lungs. In one or at most two days all physical signs of the edema have disappeared, and the attack is a thing of the past, to return, however, it may be in a week or two, it may be not for months. In one of Flemming's cases the second attack was fatal; in another attacks recurred at irregular intervals for more than two years, the patient dying eventually of heart-failure following shingles.

The onset was nearly always at night, within two or three hours of bedtime. An attack was generally attributed to one of those things that happen so frequently as to make them possibly mere coincidences, e. g., worry, excitement, a cold wind, a hot day, fatigue, some food that might not have agreed, being in a crowded room, or going upstairs. Two of Flemming's patients were men, two women. The youngest was 54, the others 68, 73 and 70 at the time of their death. It bears a curious resemblance to cardiac asthma in its mode of onset and in the general appearance of the patient during a paroxysm, but the state of the patient is much more alarming; there is serous effusion into the bronchi, and there is not necessarily other definite evidence of cardiac incompetence.

Nitrites in any form Flemming found useless. Large hot fomentations gave some relief; they were soothing, but did not cut short the attack. Oxygen given freely gave decided relief, and shortened the attack; but nothing gave so much relief as a hypodermic injection of morphin and atropin.

British Medical Journal, London

July 5, II, No. 2740, pp. 1-56

17 *Fatal Pellagra in Two English Boys. C. R. Box.
18 *Histologic Changes in Nervous System of Dr. Box's Case of Pellagra. F. W. Mott.
19 Natural History of Pellagra. L. W. Sanbon.
20 Case of Pellagra in England. J. A. B. Hammond.
21 Psycho-Analysis. D. Forsyth.
22 Toxemias of Pregnancy and Eugenics from Obstetric Standpoint. A. Routh.

17. **Fatal Pellagra in Two English Boys.**—The post-mortem examination made in the cases cited by Box showed: The body was not greatly emaciated. Fat was still present in the subcutaneous tissues and in the omentum. The eruption could be recognized on the hands and wrists, the elbows, the neck and the face as a brownish scaly thickening. The mouth, fauces and tongue showed no macroscopic lesions. The lower third of the interior of the gullet was bile-stained, but the mucous membrane appeared normal. The gastric mucosa was coated with adherent mucus, but not injected, ulcerated or wasted. The only striking point in connection with the small intestine was the quantity of mucus present in it. The edges of the ileocecal valve were purple and superficially ulcerated; the ulceration extended on to the adjacent wall of the cecum. In the colon itself, near the splenic flexure, was a circular cicatrix, about half an inch broad, and slightly ulcerated at its margin. The appendix was normal in its proximal two-thirds. A tight stricture had caused the distal third to become bulbous. It contained inspissated pus. The mesenteric lymph-nodes were enlarged: one or two of them contained caseous material which was calcifying. The largest nodes were not much bigger than peas.

There was no peritonitis, either old or recent. The liver was fatty-nutmeg in appearance and not enlarged. The gallbladder contained dark bile. The weight of the liver was 24 ounces. The spleen weighed 2½ ounces. It was normal in color, and the cut surface presented nothing remarkable. The adrenals and pancreas appeared quite healthy. The kidneys weighed 6½ ounces. They were a little swollen and on section had a pale edematous appearance. Their capsules could be stripped readily. The bladder, ureters and rectum were healthy. The prepuce had been slit dorsally, and was somewhat thickened from recent inflammation. The pleura and pericardium were free from inflammation or adhesions. The right and left lungs weighed 4 and 5 ounces respectively. They were slightly over-inflated and everywhere crepitant. No tubercles were found in lungs or bronchial lymph-nodes. The heart weighed 2¾ ounces. It was free from valve lesions and its muscle dark and firm. The marrow in the femur and ribs was bright red. The dura mater was healthy, as also were the great venous sinuses of the brain. The pia arachnoid was not edematous and showed no opacities. The spinal meninges also were healthy. The ventricles of the brain were not distended, and it was difficult to be sure of any sclerosis of the cord before hardening. A culture made from the blood immediately after death showed the presence of *Streptococcus pyogenes*.

18. **Histologic Changes in Nervous System.**—Recent scattered degenerated fibers were found by Mott in all the longitudinal and transverse sections of the sciatic nerve, not limited to any bundle of fibers, but general, though somewhat unequal in numbers in all. The roots of the cauda equina show similarly scattered degenerate fibers of the spinal cord; more marked in the postero-lateral and posterior median columns than elsewhere. The changes observed in the fiber systems by the Weigert and Weigert-Pal methods were as follows: There is a slight general diffuse sclerosis throughout the white matter of the cord in all regions, but in certain regions there is a perceptible naked-eye combined sclerosis affecting the direct cerebellar and Gowers' tracts, Goll's column, and the crossed pyramidal tracts. The ascending degenerations are very observable. The descending degeneration in the crossed pyramidal tracts is obvious to the naked eye, but, aided by a hand lens, is very evident in the lower lumbar and sacral regions.

Examination microscopically showed an outfall of fibers and replacement by glia tissue of the crossed pyramidal systems in any part of the course. The direct tract is much larger on one side than the other, and in the cervical region a well-marked outfall of fibers with sclerosis is observable with a low magnification. This is more obvious on the side where the direct tract is the larger. Some scattered sclerosis can be observed in the pyramids of the medulla.

In none of the sections of the brain examined was there any evidence of meningeal or perivascular infiltration with lymphocytes or plasma-cells, or with polynuclear leukocytes. Consequently the terminal streptococcal infection had not invaded the cerebrospinal fluid, and could not, therefore, account for the changes in the neurones by a local inflammatory condition. All the posterior spinal ganglion cells show in varying degrees a marked chromatolysis, swelling of the cell, disappearance of the Nissl granules, except at the periphery, and frequently eccentric position of the nucleus. All the anterior horn cells and their homologues in the medulla and pons show varying degrees of perinuclear chromatolysis; in some instances the cells are so markedly swollen, and the nucleus is so eccentric that it appears as if the cell were dead. There was a marked chromatolysis of the cells of Clarke's column. The Betz cells of the cortex showed similar changes but not so marked; likewise the cells of Purkinje; the pyramidal cells of the cerebral cortex did not appear to be markedly affected. The changes observed in the cells by Bielschowsky fibril method were that the anterior horn cells and the cells of Purkinje, also the Betz cells, but to a less degree, showed in varying degrees, in different parts of a section and in various regions examined, fibril changes similar in character. Some cells show hardly any fibrils, others a few, others appear quite normal, as if they had been affected in different degrees of intensity by the poison.

Dublin Journal of Medical Science

July, III, No. 499, pp. 1-79

23 Clinical Report of Rotunda Hospital for One Year, 1911-1912. H. Jellett, D. G. Madill and R. M. Allan.
24 Pole Ligation for Hyperthyroidism. W. Pearson.
25 Foot-and-Mouth Disease in Man: Aphthous Fever. C. M. O'Brien.

Edinburgh Medical Journal

July, XI, No. 1, pp. 1-96

26 *Fibromatosis of Stomach and Its Relationship to Ulcer and Cancer. A. Thomson and J. M. Graham.
27 Myotonia Atrophica. E. Bramwell and W. R. Addis.
28 Surgeons and Barbers of Edinburgh: Their Separation in 1722. C. H. Creswell.
29 Medical History at International Congress. J. D. Comrie.

26. Abstracted in The Journal, June 21, p. 2022.

Glasgow Medical Journal

July, LXXX, No. 1, pp. 1-79

30 Things Ophthalmic; New and Old. A. F. Fergus.
31 *Congenital Occlusions of Esophagus and Lesser Intestine. G. H. Edington.

31. **Congenital Occlusions of Esophagus and Lesser Intestine.**—In one case cited by Edington there was complete atresia of the esophagus. The upper segment, continuous with the pharynx, terminated below in a blind pouch, the lower end of which reached to the level of the seventh ring of the trachea. The lower segment of the esophagus on being traced upward from its cardiac end became markedly contracted as it neared the level of the bifurcation of the trachea. Almost immediately above this level (nineteenth ring) it joined the trachea, its posterior wall forming the posterior wall of that tube, and continuing upward as a muscular layer ventral to the ventral wall of the blind upper segment. There was no appearance of any band joining the segments of the esophagus, but some thin fascia stretched continuously over both.

In the second case there was complete atresia of the esophagus. The pharynx terminated in the blind pouched upper segment which extended down to the level of the twelfth ring of the trachea, 1.5 cm. below the cricoid cartilage. The upper segment appeared dilated—measuring 9 mm. across, as compared with the lower segment, which was only 4 mm. across. On tracing it up from the stomach, the lower segment of the esophagus was found to join the trachea at the level of the nineteenth cartilaginous ring. Above this level there was a common tracheo-esophageal tube, the posterior wall of the lower segment of the esophagus. There were no communicating bundles passing up from it to the blind end of the upper segment.

Journal of Laryngology, Rhinology and Otology, London

July, XXVIII, No. 7, pp. 337-392

32 *Surgery of Hypophysis. J. Broeckaert.
33 Value of Pituitrin Preparations in Reducing Operation or Postoperation Hemorrhage. J. Donelan.

32. **Surgery of Hypophysis.**—Broeckaert summarizes his paper as follows: Before operating on the hypophysis it is important to ascertain on a successful roentgenogram that the anatomic relations between the hypophysis and the sphenoidal sinus do not contra-indicate the route which it is proposed to follow. The transpalatine, being the shortest and most direct route, deserves to take an important place in the surgery of the hypophysis. Operations by the nasal or intranasal route very often only allow an incomplete evacuation or curettage of the hypophyseal cell. The intranasal route is the most conservative, but is only capable of affording good results in the hands of rhinologists. In the methods of West and Vitelli there is a risk of opening the sella turcica, not in the median line but on one side, which might be productive of disasters. The method of Hirsch, which includes submucous resection of the septum, is long and fatiguing, and demands unusual dexterity. Total resection of the nasal septum, with preservation of the dorsal arch, is superior to it from an esthetic point of view, and also in the time taken in performing it. Resection of the septum may be preceded with advantage by a wide opening into the nasal fossa. Vertical paramedian rhinotomy is the operation of choice.

Lancet, London

July 5, II, No. 4688, pp. 1-62

34 *Surgery of Large Intestine. B. Moynihan.
35 Kinetic Theory of Shock and Its Prevention Through Anoci-Association (Shockless Operation.) G. W. Crile.
36 Incarceration of Cecum and Ascending Colon in Lesser Sac of Peritoneum; Operation; Recovery. J. Back.
37 *Possibility of Achieving by Partial Pneumothorax Advantages of Complete Pneumothorax in Treatment of Pulmonary Tuberculosis. W. P. Morgan.
38 Difficulties of Tonsillectomy and How to Deal with Them. J. F. O'Malley.

34. **Surgery of Large Intestine.**—Moynihan emphasizes that it is important to know the vascular distribution in the colon, for it is alongside the arteries that the lymph currents flow and the lymph-nodes chiefly lie. His view is that, however, vessels are ligatured and whatever sacrifice of mesentery may be thought necessary, it is almost impossible to deprive the cut ends of the colon, when resection is being done, of an adequate blood-supply. Mortification due to anemia is a myth. The marginal artery affords an ample supply of blood to all parts. Moynihan points out further that a knowledge of the number, course and termination of the lymph-vessels and of the distribution of the lymph-nodes is essential to all sound surgery of malignant disease. The surgery of carcinoma may sometimes be the surgical anatomy of the lymphatic system. If a growth affects any organ it is necessary to know the boundaries of the lymph area of that part. The point of greatest importance in the lymphatic arrangement of the cecum and appendix is that vessels may pass from their origin directly to the upper group of the main ileocolic chain. The importance of this observation is, of course, this, that it seems to indicate that in any "radical" operation for the removal of carcinoma of the cecum or appendix the highest glands along the ileocolic artery must be included as well as the lower group, and those subsidiary groups which lie along the branches given off to right and left at the termination of the artery.

37. **Partial Pneumothorax in Pulmonary Tuberculosis.**—Morgan believes that what we gain by the introduction of a comparatively small volume of gas is a considerable limitation of the movements of the consolidated portions of the lung, and further, the prevention of the pumping action, which before the induction, by driving out tuberculous poison from the diseased foci, produced auto-inoculation. The rational treatment of the disease would be to introduce as much gas into the pleural cavity as would be sufficient to relieve the symptoms.

Archives des Maladies de l'App. Digestif, Paris

May, VII, No. 5, pp. 241-300

39 Generalization of Melanic Tumors throughout Gastro-Intestinal Tract. P. Savy and P. Bonnet.
40 Factors in Cholelithiasis. (Pathogénie de la lithiase biliaire.) C. Flandin.
41 Primary Cancer of Ampulla of Vater. H. Roger and N. Lapeyre.

Bulletin de l'Académie de Médecine, Paris

June 17, LXXVII, No. 23, pp. 581-595

42 Treatment of Hookworm and Distoma Disease. (Traitement de la distomatose hépatique et de l'uncinariose.) E. Perroncito.

Journal de Chirurgie, Paris

June, X, No. 6, pp. 657-815

43 Technic for Removing the Lymph-Nodes in the Neck in Operating for Cancer in Mouth or Throat. (L'évidement des gites ganglionnaires cervicaux dans les cancers de la bouche et du pharynx.) M. H. Morestin.

Presse Médicale, Paris

June 18, XXI, No. 50, pp. 497-504

44 Necessity for National Campaign against Tuberculosis. (Vers une action nationale contre la tuberculose.) E. Fuster.

June 21, No. 51, pp. 505-516

45 *Tuberculosis of Fallopian Tubes. (La tuberculose de la trompe.) F. Jayle.

June 25, No. 52, pp. 517-524

46 Quantitative Determination of Urea in Body Fluids. (Sur le dosage de l'urée dans le sang et les divers liquides de l'organisme par l'emploi du reactif de Fosse—Xanthydrol.) L. Hougounenq and A. Morel.

47 *Roentgen-Ray Exposures of Nerve at Emerging Point in Treatment of Neuralgia. (La radiothérapie radiculaire dans le traitement des névralgies.) A. Zimmern, P. Cottenot and A. Dariaux.

45. **Tuberculosis of Fallopian Tube.**—Jayle's article is profusely illustrated, showing the aspect of tuberculous lesions in the tubes and their mode of development and spread, with the details of several clinical cases all testifying to the advantages of operative-conservative measures. A history of some old tuberculous lesion, possibly years before, may aid in differentiation. In one of the cases described the young woman had been operated on for supposed appendicitis and a dermoid cyst had been removed at that time. Eighteen months later Jayle found and removed a tumor the size of an orange in front of the uterus, containing pus and a gelatinous substance. It was assumed to be some kind of a dermoid cyst until the microscope revealed its tuberculous nature. This patient was a girl of 19, apparently in perfect health except for the cystic tumor. Treatment of tuberculous processes in the tubes can be only surgical, but Jayle makes a point of leaving the uterus and ovary unmolested if possible, even if the lesions are quite extensive. He denounces the routine practice of mutilating operations in young women.

One patient was operated on over fourteen years ago. She was 22 years old at the time and has since married, and menstruation has continued undisturbed. Another girl of 16 was operated on thirteen years ago and has been in good health since. Both ovaries and the uterus were left intact and the menses came on for the first time seven months after the operation and have been normal since; the girl is now married. Jayle does not know of any other series of such operations on record in which the intervals since have been so long. Recent reexamination of a number of his patients has confirmed the superiority of conservative measures for tuberculosis of the fallopian tube after excision of the tuberculous process itself. Menstruation is not interfered with, and the remote results brilliantly justify the principle of conservative measures not only for ordinary inflammatory processes in the tubes, but also for the tuberculous, he reiterates.

47. **Direct Radiotherapy of Nerve Roots in Treatment of Neuralgia.**—Zimmern, Cottenot and Dariaux apply the Roentgen rays to the nerve root at the point where it pierces the bone. This radiotherapy of the root acts not only on lesions of the intraspinal segment or the segment where the two roots are invested with their membrane sheath, but it acts also on neuralgia and neuritis due to trouble in the segment passing through the intervertebral foramen or the extraspinal segment where the roots coalesce. They have found direct exposure of these regions to the Roentgen rays remarkably effectual in curing sciatica, neuralgia and neuritis of the *brachial* plexus, and trigeminal neuralgia. The invariable benefit derived throws light on the pathogenesis of certain neuralgias. In sciatica in particular the effect of this circumscribed radiotherapy far surpasses that obtained by any measure which acts merely on the pain and does not attack the cause of the pain. They cite Gocht's success in 1897 with *roentgenotherapy* of trigeminal neuralgia; his patient was cured in two days by this means of rebellious neuralgia. Stembo published in 1900 the histories of twenty-one patients cured by this means of rebellious neuralgia, out of twenty-eight treated. In most of the literature on the subject the region exposed was more toward the periphery, the particularly painful points, etc., and only weak doses were given. The experiences here related confirm the advantages of making the exposures at the root of the nerve involved and applying the rays in three doses of 0.5 or 1 unit each, to a total of 3 or 4 H units. The series may have to be repeated after an *interval* of a week or ten days. They never witnessed an untoward by-effects with this technic. The exposures are made in such a way that the rays reach the nerve roots obliquely between or through the laminae of the spine. For brachial neuralgia the point exposed is the emerging point of the brachial plexus between the spinous processes of the third cervical and first dorsal vertebrae. For trigeminal neuralgia, the region above the zygomatic process near the process of the malar bone, at the point of surgical access to the gasserian ganglion. For sciatica, the exposures are made over the area comprising the emerging points of the nerves near the fourth and fifth lumbar vertebrae and the first, second and third sacral vertebrae. The sacro-iliac articulation might be included in the exposure, as changes here are sometimes a factor in sciatica. If an actual inflammation of the roots is supposed to be the cause of the sciatica, the region higher up should be exposed to the rays, including an area up to the eleventh dorsal spinous process. They now have a record of thirty patients treated in this way, and they report two cases of severe neuralgia of the brachial plexus rapidly cured; also a case of brachial pruritus which had resisted five sittings of peripheral exposures but which disappeared the day that the roots were exposed to the rays. In another case ulnar neuritis rebellious to all kinds of treatment for three months, vanished entirely after the second exposure of the spinal root region. Also nineteen patients of the twenty-two with sciatica, were cured, most of them so completely that the pain not only vanished but the Achilles reflex reappeared when before it had been weak or absent. The radicular radiotherapy thus not only has a remarkable action in curing the pain but also in inducing repair, as is shown by the return of the tricipital and Achilles reflexes. They ascribe the benefit to relief of pressure at the points where the nerve pierces the bone, the rays acting like an invisible and intelligent bistoury to release the compressed nerve roots from the products of congestion or inflammation. When the neuralgia is due to a cause along its course below, of course exposure of the root will have no effect on the neuralgia.

Revue de Médecine, Paris

June, XXXIII, No. 6, pp. 449-520

48 Diabetes and Acetonemia. (Progrès de nos connaissances sur la pathogénie et le traitement du diabète sucré et de l'acetonémie.) R. Lépine. To be continued.

49 Causes of Delay in Elimination of Water. (Pathogénie de l'opsiurie.) L. A. Amblard.

50 Variations in Proportion of Cholesterin in the Blood in Liver Disease during a Course of Vichy Waters. Biscons and Rouzaud.

51 Whitish Streaks on Skin of the Chest from Stretching: Lineae albicantes; Seven Cases. (Les vergetures du thorax.) A. Cramer.

Revue Médicale de la Suisse Romande, Geneva

June 20, XXXIII, No. 6, pp. 437-512

52 *The Intradermal Tuberculin Reaction in Children. (Etude de la tuberculose infantile. L'intradermoreaction à la tuberculine; ses applications en médecine infantile.) L. Jeanneret. Commenced in No. 5.

53 The Scientific Bases of Radiotherapy in Gynecology. E. Partos.

54 Case of Rheumatic Nephritis in Recurring Acute Articular Rheumatism. (A propos d'un cas de néphrite rheumatismale.) G. Turrettini.

55 Repeated Puncture Plus Injection of a Gas in Treatment of Tuberculous Pneumonia with Recovery; Two Cases. Tecon.

52. **Diagnosis of Tuberculosis in Young Children.**—Jeanneret's long article gives the results of four years of study of the skin and intradermal tuberculin tests as applied to 1,012 children. Each child was treated on one arm with the tuberculin technic according to Pirquet and on the other arm by the intradermal method according to Mantoux' technic. In the first series of 900, in 814 of 840 tests the findings were concordant on both arms. In 735 cases there was no reaction, that is, both tests were negative; in seventy-nine cases both were positive, and in twenty-six cases the intradermal (Mantoux) was alone positive. In thirty-seven of the 735 negative cases the children died, and necropsy revealed no trace of tuberculosis in thirty-five. But in two children giving

a negative reaction advanced tuberculous lesions were found. This contradictory finding is readily explained by the fact that the children were practically moribund when the test was applied; the body was unable to respond with the specific reaction. In a further series bringing the total number of children to 1,012, with over 5,000 intradermal tests, the absolute harmlessness of the intradermal technic was abundantly confirmed. The reaction is absolutely specific, revealing in the body an active, torpid or healed tuberculous focus, without fail unless there is some acute infectious disease at the time or cachexia preventing the formation of antibodies. The younger the child the more significant a positive reaction. The experiences related sustain the assumption that the size of the focus of the reaction is proportional to the intensity of the tuberculosis. He always measures the diameter of the central papule of the Mantoux reaction, recording this and in parentheses the diameter of the halo of redness around it, when there is a halo. By this means it is possible to obtain quite an insight into the extent of the tuberculosis. With merely tuberculous lymph-nodes, the intradermal reaction was a papule not over 1 to 7 mm. in diameter, except very rarely when it ran up to 14 or 15 mm. With a tuberculous focus in a lung, on the other hand, the intradermal reaction formed a papule from 8 to 20 or even from 25 to 30 mm. in diameter. The Mantoux technic is exceptionally simple and easy; pushing up the child's sleeve, the little injection can be made in a fold taken up in the skin, with an exact dose of the tuberculin (0.0001 c.c.), and the child requires no further supervision. With the Pirquet, the child has to be watched afterward to see that the tuberculin is not wiped off, and there is never any knowledge as to the exact proportion absorbed. Jeanneret cites ten clinicians who insist that the intradermal technic has all the advantages of Pirquet's skin test while the response is quicker, more distinct and more reliable, although after the age of 7 only the negative findings with either can be regarded as decisive. Jeanneret applied the test every two weeks in a number of cases to control the effects of treatment. The reaction grows less as the child improves. The Mantoux immunity thus acquired sifts out the children who will respond favorably to tuberculin treatment, and the response also serves as a guide for the dosage.

Semaine Médicale, Paris

June 25, XXXIII, No. 26, pp. 301-312

56 Abdominal Hysterectomy for Cancer. (Les moyens d'améliorer les résultats immédiats de l'opération radicale du *cancer utérin par voie abdominale.*) R. De Bovis.

Archiv für Verdauungs-Krankheiten, Berlin

XIX, No. 3, pp. 263-408

57 Gastric Secretion during Digestion. (Untersuchungen über die Magensekretion während des Verlaufes der Verdauung.) J. P. Gregersen.
58 Mechanism of Purgative Action of Mineral Waters. (Zur Theorie der Bitterwasserwirkung.) H. Ury.
59 Perforation of Gastric Ulcer. (Ein höchst seltener Fall von perigastrischem Hämatom nach Perforation von Magengeschwüren.) F. Meinert.
60 **Gastric Achylia as Sign of Cancer.* R. Schorlemmer.
61 *Referred Pain over Stomach or Heart on Steady Pressure of McBurney's Point as Sign of Chronic Appendicitis. (Ein neues Anzeichen chronischer Appendicitis.) C. D. Aaron.
62 Quantitative Estimation of Intestinal Putrefaction. (Bericht über klinische und experimentelle Ergebnisse über Darmfäulnis im Jahre 1912.) A. Rodella.
63 *Vegetarian Diet of Japanese Monks. (*III. and IV.* Bericht über die absolut vegetarische Ernährung japanischer Bonzen.) G. Yukawa.

60. **Gastric Achylia in Relation to Cancer.**—Schorlemmer relates a case in which a life insurance policy was taken out by a supposedly healthy woman of 42 and nine months later she died of gastric cancer. The company protested against paying the insurance as it proved later that the woman at the time of her application had been under treatment by a stomach specialist, which fact she forgot to mention, as also her knowledge that there was no hydrochloric acid in her stomach content. Schorlemmer as expert testified that gastric achylia cannot be regarded as a certain sign of gastric cancer, and that achylia can have no influence in causing death. Also that there is nothing to prove that the lack of hydrochloric acid alone is a factor which renders the acceptance of a candidate extra hazardous. Gastric achylia may be congenital, or it may occur transiently in certain conditions from various causes, and it cannot be regarded in the least as an absolutely certain premonitory sign of a beginning cancer. It can only be regarded as such when there are other suspicious findings on examination, which was not the case in this instance. In fact, the gastric achylia had been known to exist in this case for so many years that its long duration seemed to exclude a causal connection with gastric cancer. In conclusion Schorlemmer warns in regard to the sentence with which the application for insurance generally commences, namely, that the applicant releases from the ban of secrecy any and all physicians who may have examined or had the applicant in their charge. Schorlemmer warns that this release from secrecy applies only to the application for a policy. After the applicant has been accepted as a policy holder, then the medical men with whom the applicant has had dealings previously or later, are once more bound by the obligation of professional secrecy. Any inadvertence on the part of the medical men which might allow matters to become known that might have an influence on the payment of the insurance money—any such inadvertent statement might result in the medical man's being sued by the heirs for the amount of the policy in case the insurance money was lost to them by such statement of his, thus disclosing matters which he should have been bound by professional secrecy not to reveal.

61. **A Sign Indicative of Chronic Appendicitis.**—This seems to be a translation of the article published in The Journal, Feb. 1, 1913, p. 350.

63. **Metabolic Findings on Vegetarian Diet.**—The first report in this series was summarized in The Journal, 1909, liii, 1949. The later research sustains the conclusions of the first, namely, that the absolutely strictly vegetable diet of Japanese monks with its minimal proportion of calories suffices for the maintenance of health in those accustomed to it.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXVII, No. 1, pp. 1-102. Last indexed July 12, p. 154

64 Tuberculin Has no Essential Action on the Blood Pressure of the Tuberculous. (Einwirkung des Tuberkulins auf den Blutdruck Tuberkulöser.) K. Weihrauch.
65 Tenderness of Muscles over Tuberculous Pleuritis. (Zur Entstehung des Muskelschmerzsymptoms bei tuberkulöser Lungenfellentzündung.) E. Isserson.
66 No Effect from Tuberculin Treatment in Experimental Tuberculosis. (Untersuchungen über den Einfluss von Alttuberkulin Koch und Tuberkulin Rosenbach auf die Impftuberkulose des Meerschweinchens.) W. Neumann.
67 The Tuberculous at Health Resorts. (Zur Frage der Behandlung der Tuberkulose im Süden und spezielle an der Riviera.) P. Schrumpf.
68 *Treatment and Prognosis of Tuberculosis in Infants and Young Children. (Tuberkulose im Säuglingsalter und frühen Kindesalter.) M. Hollensen.
69 Phagocytosis of Tubercle Bacilli in the Sputum. (Zum Studium der Immunität bei Tuberkulose.) J. D. Rodes.

68. **Tuberculosis in Young Children.**—Hollensen states that until recently the prognosis of tuberculosis in children less than 2 years old has been almost invariably grave, but in her experience a course of tuberculin treatment whenever the skin test (Pirquet) has given a positive reaction in an infant, seems to have brought about a turn for the better. She relates the particulars in a number of cases, the results being that of twelve infants less than a year old given tuberculin treatment, over 16 per cent. seemed to be entirely cured; over 16 per cent. were materially improved but died of an intercurrent disease; 16 per cent. are still under treatment, thriving well to date, and only 16 per cent. died of the tuberculosis and these had not been given the tuberculin treatment as the general condition was too bad with high fever when first seen. Of thirty-four infants 12 to 24 months old tuberculin treatment was given to twenty-four, that is, over 70 per cent., and 26.5 per cent. are now clinically cured and

only 17.6 per cent. have died of tuberculosis. Of the nine children from 2 to 4 years old, seven were given tuberculin treatment and 33 per cent. of the nine children are cured, and only one has succumbed to the tuberculosis. The tuberculin treatment is thus without effect in over 16 per cent. of the infants less than a year old; in 23.5 per cent. of the children between 1 and 2 years old, and in 22.2 per cent. of the children between 2 and 4. The number of cured cases will be much larger when the course is concluded for those still under treatment who are now thriving well. Hollensen calls attention to the fact that when the Pirquet became negative under the tuberculin treatment, it was still negative on repetition of the test later; some of the children have been thus repeatedly tested for two or three years since completion of the course. Certain others who were only much improved at the completion of the course reacted positively later and some have signs of tuberculosis at present. All this material is summarized and tabulated for comparison.

Berliner klinische Wochenschrift

June 23, L, No. 25, pp. 1145-1192

70 Balneotherapy of Cardiovascular Disturbances. (Kreislaufstörungen.) O. Müller.
71 Serodiagnosis of Pregnancy. (Weitere Erfahrungen mit der serologischen Schwangerschaftsdiagnostik.) E. Rosenthal. (Zur Abderhalden'schen Schwangerschaftsreaktion.) S. Gottschalk.
72 Histology of Hen-Pox. (Geflügelpocken.) A. Schuberg.
73 Hypophysis Extracts. (Hypophysis und ihre Präparate in Verbindung mit ihren wirksamen Substanzen.) L. Poplelski.
74 The Tonsillectomy Question. M. Goerke.
75 *Differential Diagnosis of Contracture of the Fingers. P. Schuster .
76 *Plexus Grafting. (Plexuspfropfung.) M. Katzenstein.
77 The Air in the Berlin Subway. (Ueber den CO_2-Gehalt der Luft in der Berliner Untergrundbahn.) W. Arnoldi.

75. **Contracture of the Fingers.**—Schuster gives illustrations of the various types of contracture of the fingers, discussing the differentiating points and emphasizing the necessity for exact diagnosis of the cause for an estimate of the ultimate outcome. The hand can be used fairly well in time with a familial contracture of the fingers or Dupuytren contracture and often even with claw-hand. But with neuritic or hysteric contracture there may be severe impairment of the earning capacity. He describes three cases in particular in which hysteric contracture was declared by experts to be mere simulation. Physicians doing much surgical work seem to be the readiest to suspect simulation, Schuster has noticed. The patients in the cases described were all men but one.

76. **Grafting a Nerve in a Plexus.**—Katzenstein has applied in two cases a method of nerve grafting which differs from the technic commonly in vogue in that an entire nerve is implanted—one that can easily be spared—instead of grafting merely part of the nerve, and it is implanted in the plexus where conditions favor restoration of function much better than in the lower, more differentiated segments of the nerve. In one case he implanted the suprascapular nerve of the sound side in the brachial plexus, drawing it across by the shortest route, and in the other the sound obturator nerve in the lumbosacral plexus. The nerve fitted readily into the plexus, and although the operations are quite recent yet the effects are very encouraging. The graft in the brachial plexus was done three months ago in a 9-year old child whose right hand and arm had been paralyzed for eight years.

Correspondenz-Blatt für Schweizer Aerzte, Basel

June 7, XLIII, No. 23, pp. 705-736

78 *Conservative Surgery of the Heart. M. v. Arx.

June 21, No. 25, pp. 769-800

79 No Benefit from Serotherapy of Gonorrhea in Six Women. P. Waeber.
80 Study of Effects of the Swiss 1889 Model Bullet. (Geschosswirkung des schweizerischen Ordonnanzgewehrs Modell 1889.) C. Brunner. *Commenced in No. 23.*

78. **Conservative Surgery of the Heart.**—Arx opened up the heart after a stab wound of the right ventricle, but did not attempt to suture the wound in the heart and the patient, a man of 30, recovered in a month. There had been considerable hemorrhage and the man had run about a quarter of a mile after the injury before he lost consciousness. When the physician reached him an hour later the pulse was only occasionally perceptible and the apex beat scarcely to be felt at all. The stomach region was painful on contact and there was dulness toward the left. This suggested injury of the diaphragm and liver, but a minute exploratory laparotomy showed that the abdomen was apparently intact. The pleura had not been injured and Arx exposed the pericardium by resecting the fifth and sixth costal cartilages for 2½ and 3 cm. from the sternum, thus following the path of the knife. The stab wound in the pericardium thus exposed did not bleed much, but the moment it was enlarged a large amount of thick black blood poured out. The pulse at once grew stronger. The hole in the right ventricle proved to be far to the right and under the sternum. The respiration was not good, and so after rinsing out the pericardium with saline a strip of gauze was laid directly on the heart wound and the wounds in the pericardium and thorax were loosely tamponed and the skin sutured, all except one small spot. Stimulants were given and the dressings were changed after about thirty-six hours. During this there was slight bleeding but it stopped when the sterile gauze was replaced with iodoform gauze, after which there was a smooth recovery; the pulse kept between 80 and 88 and the temperature never went above normal range. Reexamination of the patient a year later shows that the heart functioning suffers a little from the weakening of the bony wall of the chest. The heart beat lacks the usual resistance of the chest wall and this has led to dilatation and slight displacement of the apex beat. This could have been prevented by an osteoplastic operation or temporary resection, but this makes greater demands on the vitality while following in the track of the knife is comparatively simple. The case teaches that the anemia from the hemorrhage is not the chief danger in case of injury to the heart, but that the hemorrhage into the pericardium presses on the heart to such an extent that it mechanically impedes its functioning. As soon as the blood was let out of the pericardium, the heart started at once to work properly again and the direct danger to life was past. The case further emphasizes the advantages of proper drainage in case of injury of any endothelial cavity; the pericardium is no exception to this rule.

Deutsche medizinische Wochenschrift, Berlin

June 19, XXXIX, No. 25, pp. 1185-1232

81 *Heat Stroke. (Wesen und Behandlung des Hitzschlags.) A. Hiller.
82 The Skin in Diabetes. (Die Hautkrankheiten der Diabetiker.) Bettmann.
83 Tuberculin Plus Iodoform in Treatment of Tuberculosis. (Chemotherapeutische Erfahrungen bei Behandlung Tuberkulöser.) D. Rothschild.
84 Experiences with Rosenbach's Tuberculin. F. A. Elsässer.
85 *Technic for Feeding Patients with Cancer of the Esophagus. (Zur Erleichterung der Ernährung bei Oesophaguskarzinom.) W. Krienitz.
86 *Syphilis of the Kidney; Two Cases. (Nierensyphilis.) A. Welz.
87 Animal Bladders for Metreurynters. (Ballonbehandlung mit tierischen Blasen.) Baumm.
88 Nail Extension. (Schädigung des Knochens durch Nagelextension.) A. Wagner. (Unverschiebbarer Nagelextensionsapparat.) N. Spiegel.
89 *Direct Dilatation of the Eustachian Tube. (Neues Verfahren zur direkten Erweiterung der Ohrtrompete.) A. v. Gyergyal.
90 Enormous Scrotal Hernia; Two Cases. Gierszewski.
91 Sources of Error in Wassermann Reaction. (Ueber eigenlösende Eigenschaften des Meerschweinchenserums und dadurch bedingte Fehlerquellen der Wa.R.) M. Rabinowitsch and H. Neue.

81. **Heat Stroke.**—Hiller lays stress on the importance of artificial respiration in the form of heat stroke with asphyxia; this is the most frequent form, he says, and is the most amenable to the proper medical measures. When the heat of the body cannot escape, there is stagnation of the heat and the body temperature rises. He has known soldiers on the march to have a constant abnormally high rectal tem-

perature, like a febris continua. This high temperature predisposes to heat stroke, as also debility of any kind, lack of sleep and proper food, and obesity. The respiration becomes shallow, the pulse small and fast, the blood stagnates in the venous system and in the lungs, and there is a syncopal weakness in all the limbs and oppression in the chest. Lying down or resting enables the man to recuperate, but if he does not give up, the lips and ears grow cyanotic and there is more or less tendency to stupor, and finally he drops unconscious. Respiration nearly stops except for occasional gasping breaths. The pulse is imperceptible and auscultation shows rapid heart action with dropped beats, and muscle twitching. Artificial respiration should be kept up from one-half to two hours, or as long as there is the slightest trace of respiration or movement of the heart. By the Howard method this can be kept up without too much fatigue, by resting occasionally. The artificial respiration should be supplemented by stimuli to the skin, sprinkling the naked trunk, and fanning hard. As soon as the patient can breathe spontaneously, the attempt can be made to give him water or, better yet, fresh strong coffee. Unless the heart is functioning it is no use to give drug stimulants. As Thiersch says of transfusion, the heart stimulants fail just when they are most needed, and they begin to act when they are no longer needed. At the critical moment massage of the heart might be tried, done during expiration, with the second and third fingers manipulating the apex through the fourth and fifth intercostal spaces. In 470 cases of heat stroke in the Prussian army there were 329 of this type, with 7 per cent. mortality. The mortality was over 60 per cent. in what he calls the dyscrasia-paralysis form of heat stroke, of which there were 119 cases. The composition of the blood is so altered that all the vital functions are paralyzed. This form is encountered in persons who keep on in spite of the exhaustion of the muscles of respiration and of the heart and in spite of the lack of oxygen. The excessive perspiration from the extreme heat, the abnormal products of muscle metabolism under the inadequate intake of oxygen, the anuria and retention of waste products in the blood, amply explain the changes in the blood. The profuse sweating entails a loss of large amounts of alkaline blood-salts, which is debilitating. After the sweating comes a period in which there is no further perspiration; this occurs from lack of fluids in the body or from paralysis of the movement of the blood or from toxic paralysis of the nerves governing the secretions. When the man ceases perspiring, his last means of regulating heat production is taken from him and the temperature runs up rapidly to the highest figures known in man. The blood is dark red, transparent in a thin layer, and it does not turn red when shaken up with air, and does not coagulate. The reaction is acid. Hiller discusses the mechanism of each of the chief symptoms, the profound coma, periodic tonic spasms, vomiting and diarrhea and the high temperature, and reiterates the importance of stimulating the emunctories. The defective absorption and circulation prevent any action from drugs on the urine and perspiration, but the intestines will generally respond to slow injection of a pint or quart of tepid saline or of a solution of 6 gm. sodium chlorid; 3 gm. sodium carbonate; 1.5 gm. sodium phosphate, and 1 gm. potassium phosphate in a liter of warm water. This alkaline enema serves to neutralize the sarcolactic acid in the blood; the best results are obtained only when the heart is still beating. In one such case 10 drops of tincture of strophanthus were given in an enema and after two hours the man passed a liter of reddish urine and recovered.

The best means to ward off edema of the brain or lung is by venesection; the benefit is often striking after removal of 200 or 300 c.c. Venesection is indicated in the asphyxia form of heat stroke if the stagnation in the venous system and lungs persists longer than one or two hours. The heat stroke may be complicated by a predisposition to a psychopathy magnified by the exhaustion and the defective nourishment of the brain and nerves from insufficiently oxidized blood. Such patients should be kept under constant supervision and the windows closed to prevent their throwing themselves out of the window or otherwise committing suicide. If they can be made to sleep and are given nourishing food, with wine, a few hours generally restores normal conditions. Sometimes there may be loss of memory afterward, depression, weakness, pains in the limbs and slow pulse for a few days. Hiller adds that the astonishing prevalence of a psychoneurotic predisposition among the lower classes frequently adds symptoms of neurasthenia and hysteria to those of ordinary heat exhaustion. Mere heat collapse on the street, with transient unconsciousness, shallow and rapid respiration, but the temperature not above normal, requires merely to loosen the clothes and apply mild stimuli to the skin, sprinkling the face and bare chest with water. As the man recovers consciousness, he can be given cool water to drink or, better yet, a cup of strong fresh coffee.

85. **Feeding with Cancer of the Esophagus.**—The advantages are obvious of the method which Krienitz has been using with great success for some time. The aim is to do away with swallowing and with irritation of the tissues from a large sound. He uses a very narrow stomach tube, closed at the bottom, but 5 cm. from the bottom it is studded with twenty small holes over a stretch of about 7 cm. The patient swallows this tube until it reaches the obstruction. Then he introduces a stiff guide and works the tube down through the narrow part of the esophagus. The guide is then removed and liquid food is poured through a funnel into the stomach tube. He follows this by rinsing out the esophagus above the stricture with a disinfecting fluid; this obviates irritation from stagnating particles of food. The esophagus tissues are thus spared all irritation and all muscular work, and he thinks that this principle of systematic feeding through an extremely narrow tube, with no demands on the swallowing mechanism, realizes a great advance in cancer of the esophagus. He has applied the same principle in cancerous stenosis of the rectum, evacuating the space above through a fenestrated tube passed through the stricture by the aid of the stiff guide.

86. **Syphilis of the Kidney.**—Welz recently encountered two cases of kidney trouble, one suggesting a paranephritic process, the other obstinate pyelitis. The patients were young women apparently very sick and with nothing to suggest syphilis except a positive Wassermann. The sediment of the fresh urine contained clumps of leukocytes but it was constantly sterile and in spite of the high temperature, the leukocyte count was normal. The general health showed periodical ups and downs with gradual aggravation. Treatment as for nephritis led to no improvement in the course of three months, but then measures as for syphilis were followed by prompt and complete recovery.

89. **Dilatation of the Eustachian Tube.**—Gyergyai reports six cases in which he dilated the tube by means of a metal dilator made the exact size and shape of the normal tube. The article is illustrated.

Medizinische Klinik, Berlin

June 22, IX, No. 25, pp. 979-1022

92 Minor Cosmetic Operations and Treatment. (Die Kosmetik in der ärztlichen Sprechstunde.) S. Grosz.
93 Roentgenoscopy of Obstruction in the Small Intestine. (Zur Röntgendiagnostik der Dünndarmstenose und des Dünndarmileus.) E. Stierlin.
94 Case of Congenital Myotony. (Zur Klinik der sogenannten Thomsenschen Krankheit.) A. Skutetzky. (Ergographische Versuche an einem Falle von Myotonia congenita—Thomsen.) F. B. Hofmann.
95 Dislocation of both Clavicles. v. Kamptz.
96 Hypophysis Extract in Treatment of Acute Drop in Blood-Pressure. Klotz.
97 Breathing under Negative Atmospheric Pressure in Treatment of Cardiovascular Disturbances. (Zur Behandlung von Herzschwäche und Kreislaufstörungen mit der Bruns'schen Unterdruckatmung.) E. Hirsch.
98 Atropin in Treatment of Obesity. (Die Belladonna in der Behandlung der Fettleibigkeit.) F. Franke.
99 Carbonated Baths. (Zur Methodik des Kohlensäurebads.) L. Nenadovics.
100 Treatment with Radioactive Emanations. (Ueber die Verteilung von Radiumlösungen und Radiumemanationslösungen im Körper nach Einführung in die Blutbahn.) W. Engelmann.

101 Technic for Facilitating Staining of Tissues. (Eine Methode zur Verstärkung der Färbung schwer färbbarer Gewebe bei Anwendung der Methoden: polychrome Methylenblaulösung —Glycerinäther und Carbol + Methylgrün + Pyronin.) T. Reimann.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

June, XXXVII, No. 6, pp. 723-896

102 Embedding of Human Ovum. (Zur Kenntnis des Einbettung des menschlichen Eies.) N. J. A. F. Boerma.
103 Anatomic Diagnosis of Advanced Cases of Ovarian Pregnancy. (Intraligamentär entwickelte Eierstocksschwangerschaft.) E. Engelking.
104 Attempts at Criminal Abortion in Absence of Pregnancy, and Their Medicolegal Bearing. A. Liebeck.
105 Duodenal-Jejunal Hernia in Infants. E. Vogt.

Münchener medizinische Wochenschrift

June 17, LX, No. 24, pp. 1305-1360

106 Pressure on the Brain with Certain Eye Diseases. (Ueber die Höhe des Hirndruckes bei einigen Augenkrankheiten.) L. Heine.
107 *Intravenous Injections of Small Amount of Blood in Treatment of Severe Anemia. A. Weber.
108 A Thousand Subcutaneous Injections of Neosalvarsan. W. Wechselmann.
109 Treatment of Lateral Curvature of the Spine. (Zur Behandlung von Skoliosen durch Gipsverbände nach Abbott.) P. Erlacher.
110 Operative Treatment of Cancer of the Esophagus. W. Meyer (New York).
111 Serodiagnosis of Cancer. (Serodiagnostik der Geschwülste nach v. Dungern.) P. A. Petridis.
112 *Utilization of Secondary Rays to Enhance Action of Roentgen Rays. A. Pagenstecher.
113 *Implants of Skin Instead of Fascia in Plastic Operations. (Ueber Hautimplantation an Stelle der freien Faszienplastik.) O. Loewe.
114 *Clinically Unexplained Sudden Death of Parturients. (Ueber plötzliche, klinisch rätselhafte Todesursachen während oder kurz nach der Geburt.) H. Saenger.
115 Typhoid in a Regiment Traced to Old Bacillus-Carrier. Schmiz.
116 Recovery after Operative Treatment of Puerperal Sepsis. Brix.
117 *How to Recognize Minute Defects in the Placenta. (Leichtes Erkennen kleinster Plazentardefekte.) A. L. Scherbak.
118 Lumbar Intraspinal Injection of an Anesthetic in Treatment of Gastric Crises. M. Fuchs.

June 24, No. 25, pp. 1361-1416

119 Differential Diagnosis of Small-Pox. (Pocken.) C. Bäumler.
120 Bacteriologic Findings in Typhus. (Vorläufige Mitteilung über bakteriologische Befunde bei Flecktyphus.) P. T. Müller.
121 Sciatica and Its Operative Treatment. (Neues über das Wesen der Ischias und neue Wege für die operative Behandlung des Leidens.) A. Stoffel.
122 Experiences with Stoffel's Operation for Spastic Paralysis. G. Hohmann.
123 Fascia Plastic Operation for Facialis Paralysis. (Die kosmetische Korrektur der Fazialislähmung durch freie Faszienplastik.) A. E. Stein.
124 The Energometer. (Eine Vereinfachung der dynamischen Pulsdiagnostik.) T. Christen.
125 Prognosis and Treatment of Meningitis. V. Reichmann.
126 Treatment of Granulating Wounds with Jet of Dry Air, not Necessarily Hot Air. (Zur Behandlung granulierender Wunden.) H. Bergeat.
127 Infant-Welfare Stations. (Die Errichtung von Säuglingspflegematerial- und Wäschedepots im Anschluss an die bestehenden Säuglingsfürsorgeeinrichtungen oder als eigene Institutionen.) O. Reinach.
128 Diagnostic Importance of Ferments Found on Substances Free of Blood. (Diagnostische Bedeutung des Nachweises von auf blutfremde Stoffe eingestellten Fermenten.) E. Abderhalden.

107. **Intravenous Injection of Small Amounts of Human Blood in Anemia.**—Weber called attention four years ago to the excellent results he had obtained in seven cases of severe anemia by repeated intravenous transfusion of small amounts —5 c.c.— of defibrinated human blood. In one instance there was high fever for four days after the transfusion, explained by findings in the right lower lobe, but whether of inflammatory or thrombotic nature was not determined, and the disturbances proved briefly transient. Experiments and clinical experience since then in eighteen cases, transfusion being applied forty-six times, have confirmed the advantages of keeping the blood on ice for from six to twenty-four hours after it is drawn and defibrinated. This seems to do away generally with all tendency to a reaction, either subjective or objective. Only six times was there any evidence of a reaction and it was never of a threatening character. He does not attempt to explain why the setting aside for twenty-four hours annuls any toxic action of the blood; possibly some fibrin-ferment liberated by the defibrination is destroyed on standing a few hours. Weber warns explicitly, however, that his remarks apply only to the small doses advocated—never over 5 c.c. Larger doses are liable to be followed by a severe reaction, chills, fever, etc., as he illustrates by a case reported in which he injected 40 c.c. by the above technic in a man of 39 with severe anemia.

Three of the patients in his latest series were treated with the small transfusions alone—5 c.c. without arsenic; these case histories are reported in detail to show the advantages of the method. The patients were men between 23 and 49, and the youngest patient had complicating apical catarrh and mitral stenosis but marked improvement followed five transfusions by this technic. Weber insists that these small amounts are fully as effectual as large injections, and that the benefit derived is equal to that from arsenic or even surpasses it. The conflicting experiences reported by others are due to the fact that the transfusion was done only as a last resort, when the anemia had reached the actual terminal stage.

112. **Utilization of Secondary Rays in Radiotherapy of Cancer.**—Pagenstecher is now engaged in clinical research to see if his theoretic premises are tenable in regard to the reenforcing of the effect of the Roentgen rays by injecting a colloidal metal into the depths of the tumor to catch the Roentgen rays and send them forth as secondary rays; each particle of the metal acting like a little Crookes tube. The metal must naturally be in the finest possible particles, and the metal must be one that sends out soft rays under the action of the primary Roentgen rays. He thinks that a suspension of magnetic oxid of iron answers the above conditions. Spude has recently called attention to the fine results he obtained with this metal injected into the depths of superficial cancer. It may prove possible to send the colloidal metal particles directly to the tumor by way of the blood, using some metal which displays an elective affinity for cancerous tissue.

113. **Skin Implants in Plastic Operations.**—Loewe has applied the technic he describes in seven cases. The flap of skin is taken from the region near the wound, and the epithelium is shaved off down to the corium, and the adipose tissue is cut away from the rear. Then the flap is painted with iodin and implanted in the subcutaneous or subfascial tissue, and held in place with a few catgut sutures. The skin flap was used to reenforce the abdominal wall after a median laparotomy for disease of the adnexa and umbilical hernia in one case; the buried skin flap was 4 x 10 cm. in size. In another case a skin flap 3 x 6 cm. was used to close a slit in the transverse fascia the seat of hernia of the bladder. This flap was implanted below the muscle. In one case a second operation became necessary and the implant was found transformed into a solid sheet of connective tissue. The tendency to heal of these buried pieces of skin is very great, and he does not think there need be any fear of infection as each side of the implant is freshened.

114. **Sudden Death after Childbirth.**—Saenger reports what he thinks is the first case on record of acute hemorrhagic pancreatitis following close on normal delivery. He is inclined to believe that this cause may have been responsible for the unexplained sudden fatalities after childbirth in many other cases. The birth trauma, the preceding compression of the pancreas from the pregnant uterus at term, the corpulence, and the fact that the patient had eaten very heartily and drunk beer just before the first symptoms of labor, all had contributed to injure the pancreas by the high pressure in the abdomen. Delivery followed two and a half hours after the first labor pains, and the great fluctuations in the intra-abdominal pressure evidently led to the bursting of a vessel in the pancreas. Death occurred in sudden collapse soon after delivery. There had been no manipulations and no drug had been taken and the collapse came like a bolt from a clear sky. The patient was a woman of 26, a iii-para, robust and apparently perfectly healthy. Five minutes after the delivery

the placenta was spontaneously expelled and ten minutes later the woman commented on the way in which everything had gone so well. A few minutes later she vomited, fainted, the extremities became slightly cyanotic and she died. Massage of the heart and artificial respiration proved of no avail. Saenger reviews a number of cases of similar sudden death at childbirth from air embolism, perforation of gastric or duodenal ulcers or of tuberculous, typhoid or gangrenous intestinal ulcers, previously clinically latent but aggravated by the birth, the symptoms masked by the labor pains.

117. **Easy Means to Detect Defects in the Placenta.**—Scherbak accidentally discovered that the different tissues of the placenta are discolored differently when boiling water is poured over the placenta. All the blood clinging to it turns dark brown, the placental tissue gray or pink, the decidua yellowish, bluish or greenish. By the difference in tint it is thus easy to recognize any gap or defect in the surface. The heat of the water also causes the placenta to arch, much as in the uterus, which helps in the detection of even minute defects.

Petersburger medizinische Zeitschrift, St. Petersburg

June 14, XXXVIII, No. 11, pp. 129-139

129 *Diagnosis and Treatment of Acute Pancreatitis. W. v. Reyher.
130 Prophylaxis of Ophthalmia Neonatorum. (Zur Blennorrhoeprophylaxe am Neugeborenen.) G. Weidenbaum.

129. **Acute Pancreatitis.**—Reyher comments on the fact that the literature on this subject, which has advanced so much in the last two decades, is still made up of nearly single case-histories, with reports of delicate functional tests and animal experimentation. There have been very few comprehensive large works on the subject. Truhart compiled 278 cases of acute pancreatitis and is now at work on another compilation in which the figures have nearly doubled. It often happens that the patients come to the table with an erroneous diagnosis, and it is becoming more and more evident that the pancreas displays a tendency to acute disturbance with serious consequences. If the physician can only bear in mind the possibility of acute pancreatitis, differentiation will be comparatively easy. It seems beyond question that differentiation by means of the diastase in the blood and urine as Noguchi has suggested is destined to prove an invaluable aid in diagnosis. (This method was described in The Journal, July 13 and 20, 1912, pages 122 and 231.) Once diagnosed, acute disease of the pancreas requires immediate operation. Reyher reports two cases in which he made the correct diagnosis and saved the patients by a prompt operation. In a third case the diagnosis was obscured by coincident gall-stone and kidney trouble and the patient died. Persons liable to acute pancreatitis seem to be those inclined to be heavy eaters and drinkers, arteriosclerotic, and corpulent. If the disturbance seems to be located in the epigastrium and if there is paresis of the intestines or a gradual oncoming of intestinal paralysis, and if the pains radiate to the back or sacrum, the assumption of congestion or hemorrhage in the pancreas is reasonable, especially if we can palpate in the epigastrium a transverse resistance, sensitive to pressure. Examination of the stools is generally futile on account of the intestinal paralysis. The Noguchi diastase test is simple and gives instructive findings in half an hour. In Reyher's two correctly diagnosed cases there was a history of abuse of alcohol, and of oppression and slight pain at times in the stomach region especially after meals. Both patients had passed stool and flatus after the acute onset of trouble; one had stools and flatus for several days. In one case the acute disturbance began with vomiting; in the other with eructations. Both located the pain at the beginning in the sacrum. later in the back and one still later in the shoulder. There had been nothing to suggest gall-stone trouble. The patients were men of 27 and 29; the abdomen was distended but there was no specially inflated loop or much peristalsis. Deep palpation in the epigastrium elicited pain in the back and sacrum. The urine was free from sugar and albumin. In one the pancreas was found merely extremely congested, red, large and hard; in the other the process had progressed to necrosis. Cases are known of fulminating hemorrhage even during this first stage of primary hyperemia, but otherwise the progression is hyperemia, hemorrhage in the gland, necrosis, and finally suppuration and segmentation. The aim should be to detect the trouble during the first stage.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXIII, No. 1, pp. 1-334. Last indexed March 15, p. 872

131 Sources and Routes of Puerperal Auto-Infection. F. Ahlfeld.
132 *Nodose Isthmic Salpingitis.* J. Wallart.
133 The Diagnostic Importance of the Roentgen Rays in Gynecology. T. Heynemann.
134 *Clinical and Operative Bases for Trendelenburg's Operation for Puerperal Pulmonary Embolism. E. Vogt.
135 The Alleged Physiologic Pregnancy Thrombosis of the Vessels at the Site of the Placenta in the Uterus. H. Hinselmann.
136 Melanosarcoma of the Ovary. E. Vogt.
137 Importance for Pregnancy Disturbances of the Liver Functioning and Amount of Fibrinogen Present. (Untersuchungen von Harn und Blut bei Eklamptischen bezüglich der Verteilung der Stickstoffsubstanzen und des Gehaltes an Fibrinogen und Reststickstoff.) E. Landsberg.
138 *Physical and Social Condition of the Mother as Affecting the Size of the New-Born Child. F. v. Gutfeld.

134. **Operative Treatment of Pulmonary Embolism.**—Vogt has compiled fourteen cases of puerperal embolism of the lungs, and analyzes the conditions in which embolism is liable to develop. In 50 per cent. of the cases on record the women were under 30; postoperative embolism generally occurs in patients more advanced in years. Embolism of a large vessel is generally readily diagnosed even when it is impossible to discover the primary thrombus. In 65 per cent. of the cases death occurred without the slightest clinical warning. In 66 per cent. of all the known cases of fatal embolism of the lungs the main trunk or one or both of the main branches was plugged by the embolus, so that the anatomic conditions would have favored its removal. In 64 per cent. of the cases fifteen minutes or more elapsed between the first symptoms of pulmonary embolism and the patient's death, so that there might have been time to do the Trendelenburg operation. On the whole, the conditions are more favorable in the puerperium for the operation for pulmonary embolism than when the embolism follows an operation.

138. **Influence on Size of New-Born Child of External Conditions Affecting the Mother.**—Gutfeld's article was summarized in the Berlin Letter in The Journal, July 12, 1913, p. 135.

Zeitschrift für Kinderheilkunde, Berlin

VIII, No. 2, pp. 111-186. Last indexed July 26, p. 317

139 *Behavior of Hexamethylenamin and Its Elimination in Differential Diagnosis of Hydrocephalus. (Verteilungs- und Ausscheidungsverhältnisse des Urotropin im menschlichen Körper.) W. Usener.
140 *Serodiagnosis of Inherited Syphilis. (Die Dungernsche Syphilisreaktion bei Lues congenita.) S. Samelson.
141 Rumination and Pylorospasm. E. Aschenheim.
142 Convulsions Preceding all Other Signs of Spasmophilia; Two Cases. (Ueber bemerkenswerte Abweichungen in der zeitlichen Folge der spasmophilen Erscheinungen.) I. Rosenstern.
143 Congenital Debility and Spasmophilic Diathesis. I. Rosenstern.
144 Whey and the Digestive Ferments. (Molke und Magendarmfermente.) H. Davidsohn.

139. **The Elimination of Hexamethylenamin and its Use in the *Differential Diagnosis of* Hydrocephalus.**—Ibrahim assumes that hydrocephalus is caused by a disturbance in the balance of production and absorption of cerebrospinal fluid, chiefly by a deficiency in absorption. The measure of the hexamethylenamin found in the cerebrospinal fluid, as compared with the normal, is the measure of this defect, and a quantitative estimation of the drug in the fluid thus aids in the diagnosis of hydrocephalus. Usener carried out a large number of experiments to determine the amount excreted normally in the various body fluids after administration of hexamethylenamin. Urine, cerebrospinal fluid, hydrocele fluid, mother's milk and blood serum were tested. The chief elimination is of course through the urine, the amount found in the urine being about ten times that in the cerebrospinal fluid. He then gives case histories of seven cases of meningitis with hydrocephalus and

reports the hexamethylenamin findings in the cerebrospinal fluid. Numerous tables are given showing his findings in detail. His conclusions confirm those of Ibrahim, namely, that there is a defective absorption of fluid.

140. **Serodiagnosis of Congenital Syphilis.**—The Wassermann reaction requires so much time and such a complicated technic that it has never attained its maximum usefulness in general practice. Von Dungern has devised a modification of it which is in reality a simplification of Noguchi's method. As a hemolytic system he uses: (1) guinea-pig serum as complement in the form of complement paper; (2) as amboceptor, goat serum suspended in human blood; (3) the erythrocytes contained in the blood to be examined. As organic extract he uses 1 per cent. alcoholic extract of a guinea-pig's heart. All these materials as well as the very simple apparatus can be obtained ready made at a very reasonable price. It requires very little blood which is a point to be considered in examining children. It requires much less time than the Wassermann, and the physician has only to observe the end results. The question is whether it is as reliable as the Wassermann. Samelson reports thirty-six cases examined by both the Wassermann and v. Dungern methods. The results were in accord in all except one case which gave positive Wassermann with negative von Dungern. The clinical course of the disease made it probable that the negative report was correct. Samelson believes the method is thoroughly reliable.

Zeitschrift für Urologie, Berlin

July, VII, No. 7, pp. 535-614

145 Pyelotomy. Oelsner.
146 Cystic Enlargement and Protrusion of Lower End of Ureter. O. Rumpel.
147 *Gonorrheal Epididymitis and Its Treatment. H. Nakano.

147. **Gonorrheal Epididymitis and its Treatment.**—Nakano states that the outcome was constantly good in his cases of gonococcal epididymitis in which he applied hot cataplasms of 2 per cent. aluminum acetate, as hot as could be borne, renewed every quarter or half hour. He tabulates the outcome in a number of groups of cases treated by twelve different methods. The hot cataplasms gave the best results in every instance.

Zentralblatt für Chirurgie, Leipsic

June 28, XL, No. 26, pp. 1033-1064

148 Germs Carried from Skin into Tissues by the Knife. (Vom Import der Hautkeime durch das Messer.) A. Steinegger.
149 Gloves in Surgery. (Ueber Handschuhverletzungen.) H. Wolff. (Alkoholoperationshandschuhe.) B. Kozlowski.
150 Operative Paralysis of the Triangular Muscle; Three Cases. T. Walzberg.

Zentralblatt für Gynäkologie, Leipsic

June 28, XXXVII, No. 26, pp. 957-988

151 Loop for Pulling out the Uterus in Vaginal Operations. (Drahtschlinge zum unblutigen Vorziehen des Uterus beim vaginalen Operieren.) H. Sellheim.
152 *Lime Content of the Blood in Pregnancy. (Der Kalkgehalt des Blutes in der Schwangerschaft.) G. Linzenmeier.
153 *Attempted Criminal Abortion with Extra-Uterine Pregnancy; Rupture of Tube. H. Singer.

152. **Lime in the Dietary during Pregnancy.**—Linzenmeier's research has confirmed Kehrer's statements in regard to the unusually large proportion of calcium oxid in the blood of pregnant women. But he was unable to confirm Kehrer's finding of a deficiency in the blood of eclamptic women and women in childbed. The proportion in his five eclampsia patients was within normal range. It is evident that the metabolism of calcium oxid is much intensified by the condition of pregnancy. As remarked in an editorial, July 19, page 198, the developing fetus constitutes an immense drain on the lime supply of the mother. Hence the lime is mobilized, and Linzenmeier emphasizes anew the importance of supplying sufficient lime in the dietary to counterbalance the drain during pregnancy. A diet of meat, bread and potatoes contains so little lime that the maternal organism is compelled to yield up its own calcium oxid to the fetus. If we wish to prevent the traditional "loss of a tooth for each child" we must ensure that the diet contains ample proportions of lime. The organism, he declares, easily takes care of a little excess of lime, and only by ensuring an ample supply can we protect the mother from injury. He quotes from Aron's table the following list of foods with their content in grams of calcium oxid in each kilogram: meat, 0.06; potatoes, 0.2; egg albumin, 0.2; white bread, 0.3; oranges, 0.6; cabbage, 0.6; rice, 0.78; dates, 0.8; cocoa, 1.15; peas, 1.2; beans, 1.45; cow's milk, 1.51; yolk of egg, 1.9; spinach, 1.96; butter, 3.5, and cheese (Schweizerkäse) 13.5.

153. **Attempts to Induce Abortion with Extra-Uterine Pregnancy.**—Singer reports three cases and comments on the harm wrought by the curet according to recent literature when it is used to scrape out the non-pregnant uterus with an existing tubal pregnancy. In 200 cases of extra-uterine pregnancy carefully studied, in only 3 per cent. was the diagnosis positive before the rupture of the tube. Curetting the uterus seems to induce conditions in the pregnant tube which compel it to rupture. In one case fifteen minutes after a simple examination revealing a doughy resistance, suggesting possible tubal pregnancy, the woman suddenly collapsed with signs of internal hemorrhage, and the laparotomy, three hours later, on the absolutely pulseless woman showed a recently ruptured tubal pregnancy. If the curet had been applied in this case the woman would probably have succumbed to her internal hemorrhage. The experiences related not only confirm the great dangers from maneuvers for criminal abortion, but they also warn of the necessity for extreme caution in all intrauterine examinations and interventions, on account of a possible extra-uterine pregnancy. Heedless curetting—to say nothing of curetting in the doctor's office—should be absolutely discountenanced as it is liable to lead to very serious consequences, like those related. When it is absolutely necessary to use the curet, all processes outside of and around the uterus should be first excluded—with a fat abdominal wall general anesthesia may be necessary to do this thoroughly. The processes liable to be mistaken for an extra-uterine pregnancy are small tumors and cysts in the adnexa and the retroflexed pregnant uterus. The pregnant uterus may be bent over to the side in which case the cervix may be mistaken for the body of the uterus and the body may simulate a para-uterine tumor.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

May 31, LVII, No. 22, pp. 1523-1614

154 Variola Vaccine as a Source in the Culture of Vaccine Lymph (Over variola-vaccine als bron bij de kweeking der vaccine lymphe.) H. v. d. Berg.
155 *Effects Following the Ligation of the Pancreatic Duct of the Rabbit. N. Waterman.

June 7, No. 23, pp. 1615-1698

156 *Comparative Anatomy of the Membranous Labyrinth: A Fourth Crista Acustica. (Bijdrage tot de kennis van het vliezig oorlabyrinth.) C. E. Benjamins.
157 *Preperitoneal Injection of Salt Solution. (Praevesicale inspuiting van zoutoplossing.) D. Schoute.

155. **Effects of Ligation of Pancreatic Duct.**—Waterman found that ligation of the duct did not lead to glycosuria, even after the disappearance of the pancreatic tissue and of the islands of Langerhans. But, on the other hand, a hyperglycohemia resulted; in two cases secretin injections did not prevent hyperglycohemia up to 0.19 per cent. and 0.27 per cent. In a third case, secretin did not lower the sugar-content of the blood under the influence of epinephrin, so that in this case also a remarkable hyperglycohemia resulted (0.261 per cent.). These observations decrease the value of glycosuria as a symptom of pancreatitis.

156. **Research on the Membranous Labyrinth.**—In this article Benjamins offers proof that besides the three well known cristae of the labyrinth in vertebrate animals, man included, there exists a fourth crista. This fourth crista is located in the inferior sinus of the utricle, close to the ampulla of the posterior semicircular canal. This small organ was first studied by Retzius and named macula neglecta. The conclusions reached are that the macula acustica neglecta of Retzius is not a macula but a crista, and that it is found in

the lower vertebrate animals as a well developed fourth crista, and in the higher animals as a more or less rudimentary organ. The article is profusely illustrated.

157. **Injections of Salt Solution into Prevesical Space.**—After using these injections in twenty-five operations and studying their effects, Schoute reports that within a half hour the absorption is noticeable, and that after an hour the injected fluid has totally disappeared. The salt solution is probably absorbed by the loose connective tissue and the peritoneum; under normal circumstances it does not affect the bladder and the edema does not extend farther than the vesical fascia. In a few cases the peritoneum allowed the solution to pass through into the abdominal cavity.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 24, XXXIV, No. 75, pp. 791-798

158 The Human Bite and Its Complications. (Del morso e delle sue complicazioni.) G. Vitello.

Policlinico, Rome

June 22, XX, No. 25, pp. 877-916

159 Treatment of Diphtheria. T. Pontano.
160 Tuberculosis of the Kidney. (Contributo alla chirurgia della tubercolosi renale.) V. Porcile.

Riforma Medica, Naples

June 21, XXIX, No. 25, pp. 773-800

161 Disappearance from the Blood of the Bacterial Antigens. (Sulla scomparsa degli antigeni batterici dal sangue.) N. Camillo.
162 Cholecystitis. (Studio anatomo patologico e clinico di un caso di colecistite.) A. Poddighe.

Brazil-Medico, Rio de Janeiro

June 1, XXVII, No. 21, pp. 203-212

163 Alleged New Species of Euglenoid Infusorian. (Sobre um novo genero de Euglenoidea.) A. M. da Cunha.
164 Tropic Elephantiasis. E. Moniz.

June 8, No. 22, pp. 213-224

165 *Technic for Detection of Tubercle Bacilli in Sputum. (Novo methodo de homogeneisação de escarros.) A. Fontes.
166 Treatment of Rupture of the Urethra. C. Werneck.

165. **Examination of Sputum.**—Fontes commends the following technic as causing perfect blending with no mineral sediment and no change in the bacteria, while the resulting fluid is less dense than with other technics, permitting rapid centrifugation. To each c.c. of sputum 10 c.c. of a centinormal solution of hydrochloric acid is added and all stirred together with a glass rod until all becomes fluid; then he adds, for each c.c. of the sputum, 10 c.c. of decinormal soda solution and 10 c.c. of hydrogen dioxid. As it foams he adds alcohol, a drop at a time, until the foam disappears. If there is still a little viscosity in the fluid, he adds a few c.c. of water. If the sputum is not very thick the hydrochloric acid may be omitted. The deposit after centrifugation takes stains unusually well.

Semana Medica, Buenos Aires

May 22, XX, No. 21, pp. 1189-1244

167 Efficacy of Emetin in Dysentery. (Dos casos de disenteria tratados con el metodo de Rogers.) J. Destefano.
168 *Test by Weight for Albumin in Urine. (El dosage ponderal de la albumina urinaria por el metafosfato de soda.) E. M. Gache.
169 Posterior Urethroscopy. M. Mackintosh.

May 29, No. 22, pp. 1245-1300

170 Nephrectomy for Cancer. A. Zabala.
171 Artificial Plasmogenesis. (Nuevas experiencias sobre estructuras artificiales.) F. M. Urra.
172 Echinococcus Cysts in the Bones. (Quistes hidatidicos de los huesos.) H. Vilaseca.

June 5, No. 23, pp. 1301-1356

173 The Water-Supply of Towns on Large River. (Abastecimiento de agua a la ciudad de La Plata.) S. Roth.
174 Prohibition and Liquor Drinking. (La prohibicion en lucha contra el alcoholismo. Sus progresos.) V. Delfino.

168. **Gravimetric Test for Albumin in the Urine.**—Gache thinks that sodium metaphosphate is the best substance for coagulating out the albumin as the solution keeps perfectly and the method is more accurate and rapid, he says, than any of the other current technics. The solution is made by dissolving 5 gm. of sodium metaphosphate in 100 c.c. of distilled water. The urine is heated for ten minutes or for fifteen if there is more than 200 c.c. of urine, and then without stirring he adds 5 c.c. of the 5 per cent. solution of sodium metaphosphate; 1 c.c. of sulphuric acid, and 0.25 or 1 c.c. of hydrochloric acid, leaving the whole in the water bath for ten more minutes. On withdrawing from the fire, coagulation has occurred and the fluid is then decanted through a small filter, previously dried at 110 or 120 C., pouring in such a way that the supernatant fluid runs through the filter and the precipitate falls last. The beaker is then rinsed with hot water and cold water until all the precipitate is washed out. The precipitate is further washed on the filter, then washed clean with alcohol and ether, and the filter is then placed between sheets of filter paper and dried until the weight remains constant. The weight of the albumin thus concentrated and calculated for a liter of urine is multiplied by the coefficient 0.88 which gives the weight of albumin in a liter of urine. He says that extensive experience with this estimation of the albumin by weight has proved the reliability and delicacy of the method.

Hospitalstidende, Copenhagen

June 25, LVI, No. 26, pp. 713-744

175 Formation of Uric Acid in Human Body. (Urinsyrens Dannelse hos Mennesket.) I. P. Chrom.
176 Deformity of the Skull Causing Eye Symptoms. (Kraniedeformitet med Øjensymptomer.) H. Larsen. Commenced in No. 25.

Nordiskt Medicinskt Arkiv, Stockholm

XLV, Surgical Section No. 4. Last indexed May 24, p. 1676

177 Operative Treatment of Disease of the Biliary Passages. (Gallenwegekrankheiten.) N. Paus. Commenced in No. 2.
178 Vaginism; Causes and Treatment. A. L. Fönss.
179 Case of Right Intermittent Hydronephrosis Caused by Two Accessory Renal Arteries and Cured by their Removal. O. Aleman.
180 *Traumatic Denudation of the Male Genital Organs. (Evulsio cutis totalis genitalium virilium.) K. Belfrage.

180. **Traumatic Denudation of the Male Genital Organs.**—Belfrage pushed the testicles up into a small pocket made for them together in the lower part of the abdominal wall. The penis was coated with Thiersch flaps. The operation was simple and the ultimate outcome excellent. The front of the trousers and the skin over protruding parts were caught in a thrashing machine and torn off. The wound was so clean that the plastic operation could be done at once. Belfrage knows of eleven cases of similar loss of the skin from gangrene, and six of traumatic origin. Belfrage's patient has never felt the slightest disturbance from the transplanted testicles. It is possible, Belfrage remarks, that the testicles could have been fastened together to make a single organ and have then been covered with Thiersch flaps or with a pedunculated flap from the neighboring skin. His patient, however, already had three children and has been well content with the result of the much simpler operation, namely, merely the pushing up of the testicles into a sheltered nook above.

Ugeskrift for Læger, Copenhagen

June 19, LXXV, No. 25, pp. 1059-1118

181 *Symmetrical Double Percussion. (En ny Metode till Undersøgelse af Lungespidsernes Perkussionsforhold.) T. B. Wernøe.
182 Electrolytic Treatment of Gonorrhea. (Terapeutiske Forsøg ved Gonorré.) O. Jersild. Commenced in No. 24.

June 26, No. 26, pp. 1119-1148

183 Diaphragmatic Hernia. (Tilfælde af Hernia diafragmatica hos en voksen Ftisiker.) L. Melchior.

181. **Double Pleximeter.**—Wernøe says that his double pleximeter is based on a new principle for examining symmetrical conditions in the apices. The pleximeter is shaped something like a tuning-fork only much larger and with a ball on the foot of each shank. The finger presses down hard on the head of the pleximeter while the percussion stroke is very light. The illustrations show the little instrument and the method of its use for symmetrical percussion.

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OUR TENDENCY TO FADS *

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This is neither the place nor the time to enlarge on the fact that the American people have a distinct tendency toward indulgence in fads of all kinds. That the medical profession in its own field of activities has shown the same inclination can easily be proved by a retrospect into recent medical history. I do not mean to suggest that Americans in general, and American physicians in particular, are possessed of that peculiar tendency to a very much larger degree than people abroad; but with us the tendency I refer to manifests itself in a somewhat different manner. Our fads show a very short life and a continuous change. Also, we are strongly inclined to cultivate certain fads just about when they begin to be discarded by Europeans. A fad is not necessarily a thing without any value as is evident from a definition taken from the dictionary: "A trivial fancy adopted and pursued for a time with irrational zeal; a matter of no importance, or an important matter imperfectly understood taken up and urged with more zeal than sense; a whim; a crotchet; a temporary hobby."

To mention just a few of the more noteworthy fads relating to medicine in general in recent times, I might cite the treatment of senile prostatic hypertrophy by orchidectomy which was practiced about eighteen years ago with a great deal more zeal than reason, and was quickly abandoned when it was found that almost disastrous constitutional effects followed the operation. Not long after that the so-called Bottini-Freudenberg operation for the same purpose, consisting in the galvanic cauterization of the enlarged organ through the bladder, made a great deal more noise than it deserved, and after a short and harmful career has been utterly abandoned. There was a time when ovaries were sacrificed to an extent amounting to a fad. The same criticism might perhaps without much injustice be made to-day as to appendectomy. A few in this audience may perhaps recollect that short-lived fad of nerve stretching in cases of tabes or may still have in mind the time when galvanocautery of the turbinated bodies in the nose was practiced for the relief of hay-fever, chronic rhinitis and almost any pathologic state in the nostrils with a great deal of vigor and very little rationality. The injections of paraffin for the relief of cosmetic defects may also be classed among the short-lived fads. The irreparable harm which this practice has often done has led to its utter abandonment except in rare instances. I may not be competent to speak about matters outside of our own special domain, but my impression is that the extent to which Freud's psychanalysis has been exploited in neurologic literature of late borders on faddism.

Coming to matters of more personal interest to us, I might remind you of the almost unprecedented enthusiasm with which Roentgen rays were used and abused soon after their therapeutic value was first brought to our notice, twelve or thirteen years ago. It was a veritable fad to employ them in all kinds of conditions, often without even a correct diagnosis being made. It took a great many and costly lessons to narrow down the field of their usefulness and to modify the technic of their application to a plane of safety. No one can appreciate the remarkable therapeutic efficiency of Roentgen-ray treatment in many dermal conditions more than I do, but my brief criticism in this connection is directed against its misuse in inexperienced and untrustworthy hands.

The treatment of syphilis in recent times also has furnished some occasion for the pursuit of faddism. I have often had to smile at the peculiar activity and zeal with which about ten years ago mercurial inunctions were taken up in this country as if that method were something entirely new. This form of treatment, hundreds of years old, had formerly been practiced in this country only in certain resorts. The profession in general and even so-called specialists in the treatment of syphilis seemed to consider the method so cumbersome, unpractical and unclean that they seldom made use of it, being seemingly contented with the continuous administration in season and out of season of the infallible pills of protiodid of mercury. When European physicians had almost discarded inunctions in favor of injections of mercury we could here see it being taken up as a fad as if it were the latest word in the treatment of syphilis. Do not misunderstand me. I am ready to subscribe to the unquestioned value of this method, which has stood the test of time; I merely point out the peculiar faddism which gave it a short-lived popularity here.

In a similar way we could observe several years ago the short-lived practice of intravenous injections of bichlorid of mercury of which to-day we hear so little. Coming to present-day history I should certainly not be willing to criticize the enthusiastic reception which Ehrlich's great discovery received everywhere. But in this connection I feel like severely criticizing a certain phase of the most modern treatment of lues, I mean the exposure by surgery of the vein into which the salvarsan solution is to be injected. I consider this a perfectly useless and inexcusable procedure amounting to a fad. If we consider that many cases of syphilis require repeated injections of salvarsan or neosalvarsan, if we furthermore remember the frequent necessity of entering the veins in the same anatomic neighborhood for the purpose of serodiagnostic tests, we can easily appreciate the great injury to which those poor veins are subjected. Nor should we forget that a patient who has been subjected to that style of injection is forever stigmatized.

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* Chairman's Address before the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

In former times I could make the almost daily observation that physicians in general and even specialists were very slow in adopting any form of treatment which required the regular use of a hypodermic syringe. That applied, of course, particularly to the treatment of syphilis. All this has changed wonderfully of late when almost anything is being treated by the injection of all sorts of serums and the so-called vaccines or bacterins. I feel perfectly incompetent to discuss that subject in general from its many points of view. I realize its great possibilities and its scientific fundaments, but when we see that vaccines are recommended and used for the treatment of vertigo, hay-fever, rheumatism and sciatica, of appendicitis and gall-stones, we are forced to regard such practices as fads. Regarding purely cutaneous affections, their use in sycosis and furunculosis is to-day pretty well established, although we are far from possessing sufficiently exact data as to dosage and frequency of injections. I can only look with mild incredulity on the reports of the cure of pruritus ani by autogenous vaccines. I should require better proof for the microbic origin of that condition before I can accept those statements.

Of most interest to dermatologists is without any doubt the use of vaccines in the treatment of acne on account of the frequency of this disease in our practice. It is now several years since autogenous vaccines were first introduced in the treatment of this condition under the influence of Wright's epoch-making researches concerning the so-called opsonins. Since then we have gone through a series of developments. Enterprising pharmaceutical houses have done their share in complicating the matter, not to say making our lives miserable. Barely have we had a chance to make observations on the value or lack of value of their stock vaccine supposed to contain the dead acne bacillus when they suggest the necessity of using a polyvalent or mixed vaccine containing as many as five different organisms, a veritable shotgun mixture, not to say "ragout," which in itself constitutes an implied admission of weakness of this form of treatment. Leaving entirely out of the discussion the question whether or not the acne bacillus is really the cause, or at least the chief cause, of acne, a matter which is by no means universally acknowledged or proved at all, the fact remains that extensive observations will force on us the conviction that these injections have very little, or at best only temporary, effect in most cases of acne. This applies at any rate to the stock vaccines in the market. Whether or not the use of autogenous vaccines, which means dependence on a reliable bacteriologic laboratory, will ever become popular remains to be seen.

If I mention in this connection the so-called Phylacogens which have been urged on our attention during the last year by an overzealous drug house I do so merely to warn others against their use. I know only by hearsay that in rheumatism and other general infections they have occasionally been used with disastrous results, but I do know from my own experience in a few instances that the use of the special acne Phylacogen, which so far has been only experimentally tried, was followed in each case by such disagreeable, not to say alarming coeffects, that I would under no circumstances be willing ever to use them again. It is a source of comfort to know that The Journal of the American Medical Association has proved itself in this instance, as in many others before, a veritable areopagus, or in plain English, a faithful watchdog. Its severe criticisms of Phylacogens are praiseworthy. Its recent articles on vaccine treatment are a splendid guide to the novice.

Not only in regard to therapeutics do we find a tendency to fads. We can observe a similar tendency in regard to broad pathologic and diagnostic questions. There was a period in dermatology when an attempt was made to explain most skin diseases of unknown etiology on the basis of trophoneurotic influences. That was at the time before bacteriology had become established in its varied etiologic relations. More recently the subject of anaphylaxis has been forced into the foreground and is being discussed to an extent and used to explain the cause of disease in a manner which classes it among the fads.

One of the greatest accomplishments of modern serologic studies is the so-called Wassermann test. Its value is absolutely established as one of the most important diagnostic features in syphilis: but when we see that in any case of a non-specific skin disease the diagnosis of which offers no difficulty whatever, in eczema, psoriasis, lichen planus, in keratosis palmaris, lupus erythematosus, or what not, a Wassermann test is undertaken as a sort of diagnostic pons asinorum, we are forced to think that that excellent method is being abused or made a fad of.

We are living in a period to-day when the pathologic laboratory has become indispensable to us in our daily work, but we should not use it for the pursuit of fads; we should not forget that after all the laboratory should be our aid, our assistant, not to say our servant, and not our master. Clinical knowledge is in danger of becoming neglected in favor of laboratory methods. The two must work together if we are to perform our work successfully.

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NEPHRITIS

ITS TREATMENT WITH THYROID AS A PRELIMINARY TO OPERATION *

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Last year I published[1] my experiences with large doses of desiccated thyroid gland in the treatment of the usual form of nephritis. I now record my further experience with this agent, and urge its use in the treatment of nephritis as a preliminary to surgical treatment which may be necessary in such cases.

It is unnecessary, I am sure, to insist that the thyroid gland, even if given in large doses to those suffering from nephritis, will not remove the symptoms in the cases in which the disease is secondary to advanced heart or liver changes. This can also be said to be true when the symptoms of the nephritis are due to infections of the genito-urinary tract, especially tuberculosis, nephrolithiasis, an ascending infection due to an infected bladder coincident to an obstructing prostate gland, or a

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Percy, J. F.: Thyroid Extract in Nephritis, The Journal A. M. A., Nov. 9, 1912, p. 1708.

surgical kidney. These are also without the pale of favorable consideration of this treatment. It is difficult to state, at this writing, where the destructive limits of nephritis cease to be favorably influenced by the thyroid treatment. With an increasing number of personal observations, and reports from the profession giving their experience in a large number of cases, its place should be determined within a reasonable time. It requires no stretch of the imagination to recognize, however, that this treatment will not overcome the symptoms incident to a comparatively complete disorganization of the tissues of both kidneys. On the other hand, I believe that I shall be able to show in subsequent reports that the thyroid gland, when given even in the last stages of true nephritis, as a clinical fact does divert the metabolic processes of nutrition, especially with reference to proteins, to a degree sufficient to compensate, for a length of time not yet determined, for the failure of the physiologic function of the kidney.

I have not had a sufficient number of cases to determine the value, if any, of the thyroid-gland treatment when nephritis exists as a complication of diabetes mellitus. But I believe, from the results so far obtained in three cases of this not infrequent complication of nephritis, that it is worthy of more than a mere trial.

Fortunately, or unfortunately, the majority of the cases of nephritis which I have treated, especially since the publication of my former paper, have been advanced cases. My conception of this disease in the average case is as follows: Cardiovascular changes with a blood-pressure above 150 mm. of mercury. The average blood-pressure can be placed at 200 mm. of mercury. With this, there are present albuminuria and degenerative casts, coarse and fine granular, blood, fatty, hyaline and waxy. The albumin frequently is found to represent 7 gm. to the liter.[2] In one case, that of a physician, the amount was 14 gm. This urine would practically become instantly solid on heating. In addition to this, there is more or less of a localized, and, in many cases, a generalized edema. I think I can state, therefore, without fear of contradiction, that these patients were really suffering from chronic nephritis.

In the majority of the cases I have so far treated, alterations in the optic nerve and retina have been quite common. In passing, I may be allowed the statement that the thyroid gland will probably prove to be the most effective means so far discovered to arrest these destructive changes in the fundus of the eye. It is not necessary, I am sure, in order to complete the generic picture of this distressing malady, to describe the physical exhaustion and utter weariness of mind which accompanies its miserable progress.

In my former paper, I described this treatment from the point of view of the internist. Now I want to call your attention to its probable value as a *preparatory* treatment when a surgical operation is necessary in those suffering from nephritis. Correct preparatory treatment for those suffering from diabetes mellitus frequently carries them through their operative procedure with success. Thyroid extract as a preliminary treatment in nephritis, when surgery is a prospect, will also be found to have a large place as the following two cases illustrate:

Case 1.—Mr. C., aged 69, farmer, always well until two years ago, when he noticed a swelling in left inguinal region. This has gradually grown larger until the discomfort is annoying. Also noticed in the last year, that he was getting short of breath on exertion. The symptom, however, that alarmed him was puffiness of the legs, hands and face. He attributed all his symptoms to the gradually enlarging direct inguinal hernia, and asked for operative relief.

A physical examination showed, in addition to his hernia, a moderate generalized edema with considerable fluid in the abdomen. There was presystolic murmur at apex of heart; heart hypertrophied; apex beat in seventh interspace and outside nipple line. Hemoglobin was 60 per cent. (Dare); blood-pressure 170 systolic, 120 diastolic; weight, 157 pounds; temperature, 98.2 F. The urine: total quantity in twenty-four hours 22 ounces; specific gravity, 1.010; albumin, 4 gm. to liter (Esbach); many granular and hyaline casts. This was Aug. 24, 1912. Admitted to St. Mary's Hospital and put to bed. Desiccated thyroid gland, 2 grains six times in twenty-four hours, and Blaud's mass 5 grains three times a day, were administered. Aug. 30, 1912, total quantity of urine 30 ounces; specific gravity 1.020; albumin 3 gm. to liter (Esbach); fewer granular and hyaline casts, but many are still present. Sept. 7, 1912, total quantity, 35 ounces; albumin, 1.5 gm. to liter; occasional granular casts. Sept. 14, 1912, specific gravity, 1.020; albumin, 1 gm. to liter (Esbach); no granular or hyaline casts in centrifuged specimen; a few pus cells. Edema remains the same. Dried thyroid gland tablets (2 grains) increased to ten a day. After a week's treatment by the larger dose, the edema gradually disappeared, as did also the albumin. Treatment continued another week without the reappearance of the cells, albumin or edema.

At this time, a repair of the hernia was made under ether anesthesia. The thyroid-gland treatment was readministered (six tablets in twenty-four hours) at the beginning of forty-eight hours following the operation. The final examination of urine was made at this time. The total quantity for the twenty-four hours was 23 ounces; specific gravity, 1.020; albumin, 1 gm. to the liter; a few hyaline and granular casts in a 1/6 field. Patient was in good condition. At the end of the first week following the operation, the urine contained no albumin or casts; and the patient left his bed at the end of three weeks cured of his hernia and his nephritis, and has remained well until the present time (May 24, 1913).

Case 2.—J. W. A., aged 54, American, railroad contractor, was referred to me with a diagnosis of interstitial nephritis, the symptoms of which had been present for over one year. The patient had had typhoid fever when a young man; malarial fever; bilious remittent fever; left inguinal abscess the previous fall, cause unknown. Knocked from railroad-bridge eight years ago, in bed one week, did not work for one month, says he was hurt inwardly and at base of skull. Was a heavy drinker of whisky and beer twenty years ago, since then only occasionally.

Four months previously he noticed that he had to get up three or four times at night to urinate. Has an impression that he passes too much urine. Last three months complained of shortness of breath on ordinary exertion. Is alarmed because of gradually increasing swelling of both legs below the knees, which has come on within last three weeks. Complains of general weakness, although his appetite is good. Looks sick, but insists that his general health is good. He is convinced that all his trouble is due to a hernia which developed shortly after his fall from the bridge. Has always worn truss with comparative comfort; states that his hernia now interfered with his getting about on his railroad constructive work, and wants it cured.

Examination, March 2, 1912, revealed a well-built man normally of good physique. Temperature, 3 p. m., 98.2 F.; hemoglobin, 65 per cent. (Dare); weight, 179½ pounds; blood-pressure, systolic 190 mm., diastolic 150 mm.; lungs and abdomen negative except for a rather large left inguinal hernia; scar of previous abscess in left groin about midline of Poupart's ligament. Heart: apex beat diffuse and muffled and 1 inch outside of nipple line. Soft edema of both legs below knees.

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[2] Through an unwarranted error in my laboratory, the quantitative estimation of the albumin in the two cases recorded in my previous paper were incorrectly stated. In that article, whenever the percentage of albumin is given, it should be changed to read "grams" per liter (Esbach) instead of per cent.

Urine: total quantity in twenty-four hours was 20 ounces; specific gravity, 1.010; total solids 340 grains; albumin, 4 gm. to liter (Esbach); many granular and hyaline casts.

Patient put to bed in his home, instructed not to eat red meats, otherwise usual diet. Six 2-grain tablets desiccated thyroid given a day for first week. At end of week, urine had increased to 40 ounces in twenty-four hours; specific gravity, 1.020; total solids in twenty-four hours, 600 grains; fewer granular casts and no hyaline casts were found in centrifuged specimen.

It is unnecessary to burden this article with a detail of the urinary examinations, which covered a period from March 2 to May 12, 1912. It is sufficient to say that this patient's urine was found to be normal when examined April 28, 1912. The experience gained in the previous case of nephritis complicated also with a hernia, made it seem justifiable to operate on this man's hernia. The operation was performed May 16, 1912, at St. Mary's Hospital, by the Bassini-Andrews method. The first forty-eight hours a limited quantity of water was given. The urine examined at the end of this period contained 1 gm. of albumin to the liter, and a few granular and hyaline casts. The dried thyroid gland was again administered, six tablets (2 grains) in the twenty-four hours. In one week the urine was normal, and the convalescence was uninterrupted. The urine of this patient was examined May 12, 1913, one year after his surgical operation, and found to be normal. The patient is in excellent health, and has resumed his work as a railroad contractor.

Before describing the method that I have followed in the dried thyroid gland in nephritis, I wish to present another case that at least offers additional possibilities for the use of this substance. I refer to non-obstructive postoperative suppression of urine.

CASE 3.—Mrs. J., aged 43, the mother of four children, gave a history of renal calculus extending over a period of three years. Aside from the ordinary and common pelvic pathology incident to child-bearing, and the history of renal calculus, this woman's history is negative. Roentgenoscopy showed a ureteral calculus near the bladder. High palpation through the vaginal fornix touched a small, hard mass which not only caused considerable pain, but started irritative symptoms in the bladder. This was undoubtedly the same foreign substance shown in the roentgenogram. Under ether anesthesia, in the Galesburg Hospital, Aug. 19, 1910, the ureter was opened and the stone removed through an extraperitoneal incision just inside the left iliac bone; small cigarette drain. The calculus was ¼ inch long and ⅛ inch in diameter, and had produced a condition of hydro-ureter. The proximal part of the tube was not over half an inch in diameter. The patient reacted well from the operation, and with the exception of a rather rapid pulse (from 100 to 120), which was attributed to her chronic, but mild, neurasthenia, seemed to be progressing favorably. At the end of forty-eight hours the nurse reported that no urine had passed, and also that there was no bladder distress. The woman was catheterized, and only half an ounce of urine was obtained. Unfortunately, this specimen was *not* examined. The usual treatment, namely, plenty of water both by mouth and enteroclysis, together with hot packs, free catharsis, strychnin, digitalis and nitroglycerin, was followed for the next thirty-six hours without results, as far as obtaining urine by catheter was concerned. At this time, two 2-grain desiccated thyroid tablets were given every three hours, and all other treatment stopped. No urine having been voided in twelve hours, the catheter was again inserted, and 2 ounces of urine obtained. The specific gravity of this specimen was 1.008, albumin sufficient to make the specimen opaque by the potassium-mercuric iodid test, no sugar or casts, but rather numerous blood-cells. In twelve hours the catheter was again inserted, and 4 ounces of urine obtained. It was of the same general chemical type as that obtained the previous twelve hours. Treatment by dried thyroid gland was continued. Eight hours following the last use of the catheter, the patient passed voluntarily 20 ounces of urine, the specific gravity of which was 1.025, and normal, except for a slight amount of albumin and a few blood-cells. The following twenty-four hours, 50 ounces of normal urine were voided.

We shall all agree that one case cannot have much significance; and yet the history and treatment, as outlined herein, must impress you, as it did me, that the results in this case will justify the further use, in similar cases, of the thyroid gland until its true value can be determined after a trial in a larger number of cases. It is my rule now, and I would earnestly recommend to others to give a 2-grain tablet of the dried thyroid gland six times in the twenty-four hours, for two days, in all cases in which the genito-urinary tract is to be attacked by the knife. My reason for this is not alone the results that I have seen from the use of this gland in nephritis as it ordinarily occurs, but especially its remarkable efficiency in clearing up the albuminuria of pregnancy, to which I also referred in my first paper. These experiences have impressed me to such a degree that I am willing to assert that clinically, at least, the *desiccated thyroid gland is indicated in all forms of* existing, or threatened, urinary pathology that do not come within the list of exceptions which I have already indicated in the first part of this paper.

METHOD OF ADMINISTRATION

In an editorial[3] in THE JOURNAL there is the following caution as to the giving of the thyroid extract in this disease: "If the treatment is determined on, we suggest the use of small doses cautiously increased." Justifiable as is this warning in reference to any new treatment that may have in it possibilities for harm, unfortunately, it has in this instance been the means of destroying the value of the treatment as followed by many practitioners. Small doses, that is, 2 grains of the dried gland every four hours, are absolutely ineffective, and have no apparent effect in arresting the progress of the disease. My own rule is to give six tablets a day for the first week, each tablet representing 2 grains of the dried thyroid-gland substance. If the total quantity of urine is collected each twenty-four hours after the thyroid-gland treatment is commenced, it will be noted that the abnormal characteristics of the urine previous to the treatment are greatly intensified. Not only is the quantity in the twenty-four hours lessened, but there is a marked increase in both the number of casts and in the quantity of albumin; with this, the patient's physical symptoms in many cases, but not in all, are intensified. This disturbance lasts, in those subject to it, not over three days. The elimination of casts and albumin then begins to decrease, and the patient shows physical improvement in a ratio commensurate with the change for the better in his urinary findings. At the end of the first week, my rule is to increase the number of tablets (2 grains) to 10 a day. This quantity of the drug, when combined with absolute rest in bed, constitutes the routine in the average case.

The fear of hyperthyroidism is almost groundless while the urine contains casts and albumin. When persisted in after these elements have disappeared, in a few cases I have had a mild hyperthyroidism develop, which disappeared in a week, when thyroid was discontinued.[4]

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[3] Thyroid Extract in Bright's Disease, editorial THE JOURNAL A. M. A., Nov. 9, 1912, p. 1725.

[4] Since the publication of my first paper, I have received reports from three colleagues who each had a case of severe nephritis, in their practice, which disappeared spontaneously on the onset of an exophthalmic goiter. Interesting enough, these practitioners made note of the fact, but attached no particular significance to it. The three patients were adults, two women and one man.

After the urine becomes normal, I reduce the number of tablets to four or six a day, and give these three weeks out of each month. Whether this is absolutely necessary, or not, I am not quite prepared to say. Most of my early patients have not continued with the treatment in this way, and have remained well. If the high blood-pressure persists, I follow the thyroid treatment with the persistent use of potassium iodid and nitroglycerin, as mentioned in my previous paper. I do this because, clinically, I am quite certain that it has done my patients, with this condition, much good. I am convinced that the administration of the dried thyroid gland in addition to offering a method of efficient treatment to the internist, offers to the surgeon, as well, a means of benefiting his operative cases when nephritis, mild or severe, is one of his problems.

NECESSITY OF CONSENT TO OPERATIONS

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I. CONSENT OF PATIENT HIMSELF

Express and Implied Consent.—An operation on a patient without the latter's consent is, as a general proposition of law, an aggravated trespass, and an action for assault and battery will lie.[1] Such consent is a question of fact, and it may be found to be expressed or implied. There is no problem for this topic when the consent is expressly given, except that of skill.

Consent Implied in Fact.—The determination of implied consent creates the difficulties. It is held that such consent is properly deducible from such facts as submitting to, preparing for, and following out the directions of the surgeon preparatory to an operation.[2] This is consent implied in fact, and arises from surrounding circumstances and conduct. Thus, take the case in which the plaintiff instructed the surgeon to remove neither ovary, if both were found to be diseased; the surgeon replied, "You must leave that to me." During the operation he removed both ovaries, but the court held that the jury were properly instructed to find for the defendant on the ground that there was a tacit consent by a failure to disapprove the answer.[3]

Consent Implied by Law.—But the question of implied consent is not always determined by the acts of the plaintiff. Dicta in the cases lay down the proposition that the law will presume, imply, or furnish consent in cases of emergency work. "If a person should be injured to the extent of rendering him unconscious, and his injuries were of such a nature as to require prompt surgical attention, a physician called to attend him would be justified in applying such medical or surgical treatment as might reasonably be necessary for the preservation of his life, or limb, and consent on the part of the injured person would be implied.[4] The implication of consent in such cases is of course fictitious, and scarcely necessary save to satisfy the lover of legal fictions. But in no reported case have the facts permitted this proposition to be applied. In the two cases from which the dicta are quoted, the emergency feature did not arise. Physicians and surgeons, however, proceed on this theory in their emergency practice and undoubtedly will continue to do so in the interests of humanity. There must be many such cases in large cities, and it is noteworthy that none have found their way into the books.

Conditions not Anticipated.—Next, distinguish this emergency work *ab initio* from the case in which the surgeon while operating *with* the consent of the patient discovers conditions not anticipated. These may be of two sorts: first, a different or additional operation may be the correct surgical practice, but there is no necessity, although it is advisable, that this be done at once; second, a different or additional operation may be immediately necessary to save the patient. Concerning the first proposition, there is a case directly in point. In Mohr *vs.* Williams,[5] the defendant examined the right ear of the plaintiff, but not the left ear (the latter being filled with foreign substances), and advised an operation on the right ear. The plaintiff consented. When she was under the anesthetic, the defendant examined her left ear, and found that to be in a more serious condition than the right ear. The defendant called this fact to the attention of the plaintiff's family physician who was present at the plaintiff's request. No objection being made by him, the defendant operated on the left ear instead of the right. The operation was skilful. Evidence was conflicting as to its value as a cure for plaintiff's trouble. Plaintiff held that an action lay for assault and battery. The jury found that there was no implied in fact consent on the part of the plaintiff for the performance of this different operation on the left ear.[6]

The law would not furnish the defendant with its consent. To quote the court: "The diseased condition of the plaintiff's left ear was not discovered in the course of an operation on the right."[7] Clearly, then, a surgeon may not perform an operation other than that to which consent has been given unless, perhaps, appalling necessity intervenes. As to the latter possibility the opinion suggests some latitude but the terms are general. It is difficult to ascertain whether or not the surgeon would have acted within the scope of his consent had he operated on the left ear, and then removed the ear-drum, assuming this to be the correct surgical practice. Again, it is a question whether or not consent to the removal of the ovaries includes consent to the removal of the uterus.[8] True, these are largely questions of fact, but what verdict is the jury justified in making?

Generally, consent may not be implied on the ground of correct surgical practice.[8] The same opinion that utters that proposition states this: "When the patient desires or consents that an operation be performed and unexpected conditions develop or are discovered in the course of the operation, it is the duty of the surgeon, in dealing with these conditions, to act on his own discretion . . . and in the nature of things he must frequently do this without consultation or conference with anyone, except, perhaps, other members of his profession who are assisting him. . . . In such event, the surgeon may lawfully, and *it is his duty* to, perform such operation as good surgery demands without such consent."[9] (Pratt *vs.* Davis.)[10] Apparently, the law gives its consent in case the unanticipated conditions require immediate attention, but withholds it in case the emergency feature is not present. The surgeon may not act "on his own discretion," but on the laws of discretion.

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[1] Cooley: "Torts," Student Ed., p. 674.

[2] Mohr *vs.* Williams, 95 Minn. 261; 104 N. W. 12, 1905.

[3] Beatty *vs.* Cullingworth, 44 Cent. Law Journal 153. So, a patient, feeble, nervous and delirious would take no medicine from anyone but his physician. There were many visits and claim of physician allowed, the court finding implied consent by the semi-conscious man. Succession of Short, 45 La. Ann., 1485, 14 So. 184.

[4] Mohr *vs.* Williams, 95 Minn. 261; 104 N. W. 12; Pratt *vs.* Davis, 224 Ill. 300; 76 N. E. 562.

[5] 95 Minn. 261; 104 N. W. 12.

[6] See 4 Mich. Law Review 49; 5 Mich. Law Review 40.

[7] 95 Maine 261, at p. 269.

[8] Pratt *vs.* Davis, 224 Ill. 330; 76 N. E. 562.

[9] Italics are *mine*.

[10] 224 Ill. 300; 76 N. E. 562.

Duty to Act.—If a person is delirious and cannot be made to understand the necessity of the treatment proposed, it seems that the physician may cooperate with the patient's immediate family and resort to reasonable force. If, however, the family withhold such consent, there is no obligation on the part of the physician to act. (Littlejohn *vs.* Arbogast.)[11]

II. CONSENT OF THOSE OTHER THAN THE PATIENT

Husband and Wife.—In M'Clallen *vs.* Adams,[12] an early case, the plaintiff surgeon sued in assumpsit for services rendered defendant's wife. The patient suffered a scrofulous humor, and the defendant brought her to the plaintiff, who lived in an adjoining town. After ten weeks, the plaintiff operated on the woman, but she died in a week. The defendant was not notified of the operation until the day before her death. The defense was that the services of the operation were not rendered at the request of the defendant. It was held that the assent of the wife was implied from the fact that she submitted to the operation. Similarly, the defendant's consent thereto was said to be implied. C. J. Shaw in his opinion says:

> "The defendant by placing his wife under the care of the plaintiff, whom he knew, at a distance from his own residence, for medical and surgical treatment, for a dangerous disease, impliedly requested him to do all such acts and adopt such course of treatment and operations as in his judgment would be most likely to effect her ultimate cure and recovery with the assent of the wife, and therefore the operation was within the scope of authority given him."

In State *vs.* Housekeeper,[13] the husband sets up that while he gave his consent to an operation on his wife for tumor of the breast, he withheld it if the trouble was cancer. The operation was performed and the patient died. The diagnosis was cancer. It was proved that the woman consented to the operation and that there was no misrepresentation. The court held that the husband's consent was unnecessary. "Surely the law does not authorize the husband to say to his wife, you shall die of the cancer; you cannot be cured, and a surgical operation affording only temporary relief, will result in useless expense."[14]

In Pratt *vs.* Davis,[15] the patient, an epileptic, clearly did not consent to the removal of her ovaries and uterus. The defendant surgeon, owing to a fear of alarming the patient, had purposely withheld from her the information of her condition and the nature of the operation. With reference to the husband, it appears that he consented to the first operation, after which the patient returned home, but did not improve. Then the surgeon advised the husband to send the patient back for "finishing work." No explanation was made as to what this would be. The ovaries and uterus were removed. The jury found that the husband had clearly not consented to the second operation and the court held that none could be implied from his consent to the first operation.

The early Massachusetts case, by implying the husband's consent, implies that his consent was necessary. But even then, such consent was found after no little stretching of facts. The later Connecticut case stands for the proposition pure and simple that the wife is the keeper of her own body in so far as medical services are concerned and that the husband's approval is unnecessary if the wife has consented. In the Illinois case, a different situation occurs. The wife did not consent. The court would not pass on the question as to whether or not she (an epileptic) was capable of consenting, or whether the husband's consent alone was sufficient. The decision rested on the finding that neither the husband nor wife consented. Assuming the wife possessed no judgment, as in the case of a lunatic, possibly her husband's consent alone would be sufficient.

The consent of husband or wife to an operation on the unconscious spouse should, however, be sufficient to protect the surgeon; provided, of course, that it is necessary and that the parties act in good faith. Necessarily the wife need not submit to an operation if she is *compos mentis,* although so ordered by the husband.[16]

Under the statutes[17] whereby the expenses of the family, which include medical services, shall be chargeable on the property of both husband and wife, the court should permit a recovery against the husband or wife for such services regardless of the consent, or refusal to consent to the services rendered, if the patient consents.

2. *Parent and Child.*—At early common law, the rights of parents concerning their children were jealously regarded. An operation on a child without the consent of the parent would doubtless have been actionable. But modern influences, paternalistic ideas of government and "first-aid-to-the-injured" societies have stepped vigorously on the toes of these parents. The tendency is undoubtedly in this direction: When a child has arrived at a proper age and understanding consent by the child will overcome any attitude of the parent. But prior to that age, "we contend that it is wrong in every sense, except in cases of emergency, for a physician and surgeon to enter on a dangerous operation, or, as in this case, the administration of an anesthetic, conceded to be always accompanied with danger that death may result, without the knowledge and consent of the parent or guardian. It is against public policy and the sacred rights we have in our children that surgeons should take them in charge without our knowledge and send to us a corpse as the first notice or intimation of their relation to the case." Bakker *vs.* Welsh.[18]

In that case, a 17-year-old boy had a tumor in the ear. He went to the city where an aunt and two sisters took him to the defendant, a specialist. A specimen from the ear was taken. On the occasion of the second visit, at least one sister was present, and the specialist advised an operation. The father was not notified before the operation. The boy died under the anesthetic. There was no lack of skill. The father insisted that his consent was necessary but despite the opinion just quoted, the defendants were found not guilty. The case is undoubtedly correct in view of all the circumstances of the age of the patient, the presence of relatives, and possibly a delegation to these relatives by the father of the right to consent. The decision must stand or fall as one views the consent of minors to operations on themselves.[19]

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[11] 95 Ill. App. 605. See later, "Consent of Relatives."
[12] 19 Pick. (Mass.) 333; 31 Am. Dec. 140.
[13] 70 Md. 162; 16 Atl. 382. (1888)
[14] 70 Md. 169.
[15] 224 Ill. 300; 76 N. E. 562. (1906)
[16] See paragraph 1.
[17] See Hurd, Illinois Revised Statutes (1909), Chap. 68, Sect. 15.
[18] 144 Mich. 632; 108 N. W. 94.
[19] See 4 Mich. Law Review 49; 5 Mich. Law Review 40.

3. *Relatives Other Than Husband and Wife or Parent and Child.*—Apparently if the patient is unable to consent for himself, and relatives refuse their consent, the surgeon is liable if he operates.[20] An interesting question for determination is based on the assumption that the relatives (to collect accident insurance) without reason and for a wrongful purpose, refuse to consent to an operation on an unconscious patient, without which the patient will incur irreparable damage. May the surgeon, realizing these facts, proceed and be protected?[21]

SUMMARY

The safest practice is to obtain the consent of the patient. If she be a wife, that is probably sufficient. If the patient is a child, at present, the consent of the parent should be obtained. If the patient cannot consent, every effort should be made to gain the consent of some relative. Carefully explain the scope of the proposed operation to the patient, or if that be clearly inadvisable to the nearest relative. Operate no more than outlined except in dire emergency.

431 South Dearborn Street.

THREE CASES OF AMEBIC DYSENTERY TREATED WITH SALVARSAN

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Basing deductions on insufficient evidence and forming definite conclusions which take into consideration but few cases is a dangerous tendency which each year is being more widely realized. So many unreported factors may be concerned with so-called cures that until large numbers of observations have been made it is hazardous to attempt a scientific report on a meager number of cases.

We fully appreciate this, and the following case reports would not be presented at this time were it probable that further studies could be made at this post. Other physicians located at places in which amebic dysentery is more common may, however, definitely determine whether or not the very suggestive results herein reported were due to the treatment outlined.

The most interesting case (Case 1) had given a positive (+ +) Wassermann reaction and it was only when the patient, a non-commissioned officer, had reported a marked cessation in the frequent and painful defecations that a fuller history was sent for and our attention was directed to the possibility of salvarsan being a specific for amebic dysentery.

In our use of this drug, given intravenously, we had previously noted the rather constant and seemingly direct action on the intestines. This was indicated by two or more days of diarrhea following these injections. Men who had been constipated reported loose bowel movements; a few with normally loose movements had constipation after receiving the drug. Whether this action resulted from an increased tension in the blood-vessels due to the addition of 300 or 400 c.c. of fluid, or from some direct action on the intestinal mucosa is, of course, a matter of conjecture.

As a cure for syphilis, salvarsan and neosalvarsan have fallen far short of what we had hoped. What it may accomplish in other diseases is a matter of increasing interest, and with this in mind these three cases are reported:

Case 1.—F. A. C., aged 33. Jan. 15, 1913: Family history negative and, aside from present report, personal history also negative. Venereal history: June, 1912, chancre; no treatment. Oct. 31, 1912; Wassermann ++; test made as a routine examination, there being no evidence of syphilis. Dec. 3, 1912; neosalvarsan, 0.9 gm. intravenously, followed by one day of painful liquid bowel movements. Since then one formed stool each day. Feb. 7, 1913; neosalvarsan, 0.9 gm. intravenously.

Past history of amebic dysentery: Patient stated that previously to taking this neosalvarsan in December, 1912, he had been having three or four loose, bloody bowel movements each day and two movements at night. These movements contained blood and mucus. When compelled to take long marches, the diarrheal discharges became as numerous as twenty or thirty a day, necessitating his being relieved from such duty.

On closer investigation the following record was obtained from the War Department: Patient was admitted to hospital, Fort McKinley, Philippine Islands, April 1, 1907, with chronic amebic dysentery; remained there for two weeks; then sent immediately on transport *Thomas* to this country. On board of this transport the records show a continuance of this condition. During October, 1907, patient was in hospital for "dysentery, amebic, chronic;" in hospital again in 1909 and 1910 at Fort Porter, N. Y., with chronic dysentery. Since then he states that he gave up all hope of a complete cure of the dysentery and that so long as he was careful in diet and exercise he averaged only five stools a day.

Since receiving the neosalvarsan together with mixed treatment for syphilis he has had one normal movement a day with no blood or mucus present, has gained 21 pounds and can eat the usual sort of foods without bringing on any diarrhea. On May 28, 1913, the Wassermann was still positive (++) after stopping the syphilitic treatment for a month or so.

It should be stated that the history of amebic dysentery in this case was unknown to us as the patient had never been on sick report during our service at this post. The matter was first brought to our attention when the patient reported that his dysentery was cured following the administration of the neosalvarsan, and the previous record of admissions to sick report for dysentery was obtained from the surgeon general's office. The bowel movements have continued normal and amebas cannot be demonstrated.

One interesting feature in this case, which is presented without comment, is that before treatment the man was bald and now he has a rather excellent growth of hair.

Case 2.—L. P., aged 47, 1913: Family and personal history negative. Denies all symptoms of syphilis and Wassermann reaction negative. Had amebic dysentery in Philippines in 1905 and was sent in from the field to a hospital where he remained for six months taking the ipecac and quinin treatments. Finally sent back to the United States and treated at San Francisco hospital. Was better during winter. Sent back to Philippines much improved in 1908. Dysentery again became so severe that the patient, a soldier, was excused from practically all duties for seven months until return to United States. Says that he had from twelve to twenty-five liquid stools a day, containing blood and mucus. Weight dropped from 174 pounds in 1905 to 130 pounds in 1911. While at Fort Porter, Buffalo, N. Y., suffered so from dysentery that he was considered as unfit for service and was recommended for discharge. The amebas present in the stools were so numerous that he was taken to various hospitals and clinics in Buffalo in order to give students an opportunity for studying *Amoeba histolytica*.

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[20] Littlejohn vs. Arbogast, 95 Ill. App., 605.

[21] Another question is whether or not the patient may recover from the relatives for withholding their consent while he was unconscious, the surgeon refusing to act without it.

About this time, reports of salvarsan and its wonderful cures were heralded in the daily papers and the soldier, although having a negative Wassermann and no symptoms of syphilis, insisted on being given the treatment. Dr. Herbert A. Smith of the Medical Reserve Corps considered the man so seriously ill and so weakened that he hesitated about giving the treatment. So insistent was this soldier, however, and so slim did the chances for recovery seem that finally 0.6 gm. salvarsan was administered. Improvement in his condition was manifest immediately. Meanwhile his papers recommending discharge had returned and he was ordered to Columbus for final discharge. After a short period of careful examination he was returned to Fort Porter with the statement that no amebic organisms were discoverable and that the man was fully able to continue duty. From December, 1911, till February, 1913, he had only about three movements a day and two at night. His weight increased to 150 pounds. Examinations of stools on Feb. 18, 1913, showed some *Amoeba histolytica*, small amounts of blood and a little mucus. Bowel movements were painful.

The patient was given two intravenous injections of neosalvarsan, each of 0.9 gm., one on February 18 and one ten days later. The movements became formed, no blood present, and the amebas, after the first injection, disappeared. The patient was under observation for about a month after the first injection and during this time repeated examinations showed no reappearance of the ameba.

Case 3.—A. J., aged 41. Feb. 17, 1913: Present weight 212 pounds. Family and personal history negative except for malaria and typhoid fever. No venereal history obtainable and Wassermann reaction negative.

In 1901 patient had amebic dysentery in Philippines for six months until he was sent back to the United States. During tour of duty in this country was in fairly good condition and had only four or five movements daily. Again went to Philippines in 1904 and dysentery reappeared. Had from eight to ten loose, bloody and painful movements. Returned to United States and was improved by change of climate and diet. In 1908 went back to Philippines and immediately there was a decided recrudescence of the dysentery with from twenty to thirty bloody discharges daily. He was returned to this country and was sent to Fort Porter, Buffalo, N. Y., in 1909. At that time he weighed 160 pounds. This time there was little improvement from change of environment and with diarrheal movements every half hour or so his weight dropped to 130. Amebas, blood and mucus were present in the discharges and he was taken to hospitals for clinical study of the *Amoeba histolytica*.

In March, 1911, he was given salvarsan intramuscularly, although the Wassermann reaction was negative. Having seen advertisements of all manner of cures from this remedy and being in such a weakened condition, he insisted on taking the remedy. Our predecessor at this hospital naturally saw no reason to give this remedy with a negative syphilitic history and Wassermann. The man's condition, moreover, was such as to cause doubt as to his ability to stand the treatment. The patient was determined, however, to have salvarsan and accordingly paid a civilian $50 for one intramuscular injection. In three weeks he began to improve, and had only three or four stools a day. In six months he had begun to regain his former weight and strength.

About a year after this treatment, no other medication having been given, the stools show no amebas, are formed, there is no blood or mucus and his weight is 212 pounds stripped.

It is perfectly evident that these three cases prove nothing. Yet the results have been so striking that it has seemed desirable to make this brief report in order that others with more clinical material may investigate the matter further.

THE ELIMINATION OF THE DIGITALIS BODIES *

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The digitalis bodies show such wide differences in the duration of their action, even after intravenous administration, that one would be inclined to expect similar variations in their rate of elimination. The difficulties attending the quantitative chemical estimation of these bodies have interfered with the investigation of their elimination, and we know almost nothing of their fate in the organism.

Numerous observers have investigated the question of the storage of these glucosids in various organs, and, while I also have considered that phase of the question, the present paper will be limited almost entirely to a discussion of the disappearance of these agents from the circulation. It may be remarked parenthetically, however, that the rat sometimes excretes ouabain almost quantitatively after its subcutaneous injection, and that no one has been able to demonstrate either the fixation or the destruction of notable amounts of any of the digitalis bodies in the mammalian tissues.†

So far as I am aware, very few investigators have sought to determine the rate of disappearance of the digitalis bodies from the circulation of the intact mammal by direct examination of the blood following their intravenous injection.

Polaillon and Carville[1] state that after the subcutaneous injection of strophanthus into the frog it is not eliminated in the urine, saliva or into the intestine, but that it accumulates in the blood.

Cloetta and Fischer[2] injected 5 mg. of a preparation known as digalen into the vein of a dog and found 60 per cent. of it remaining in the blood after an hour and twenty minutes.

Clark[3] injected strophanthin subcutaneously into the grass snake and after sixteen hours found that a very small amount was still present in the blood, but none in the other tissues.

Heuser[4] found a small amount of strophanthin in the blood of the toad an hour and a half after its subcutaneous injection, but his conclusion seems open to some question.

I have intentionally omitted all mention of perfusion experiments from the foregoing brief review of the literature, because I believe that there are essential differences between the disappearance of the digitalis bodies from perfused fluids and from the intact mammalian circulation.

In the present research measured amounts of ouabain or digitoxin were injected intravenously, the animal exsanguinated, the blood defibrinated and the amount of the drug remaining therein determined by injecting into the vein of another animal of the same species enough of the blood to cause death, or, when death did not follow the injection of the blood, by injecting a solution of ouabain slowly until death resulted.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

† Since the above was written we have found that the liver of the rat removes ouabain (so-called crystalline strophanthin) from the blood-stream with great rapidity. Three mg. of ouabain were injected intravenously into a rat, the animal was killed after a few minutes and the liver was found to contain approximately 1 mg. of ouabain, or one-third of the total amount injected. The cat does not appear to behave toward these bodies in this way.

1. Polaillon and Carville: Arch. d. physiol. norm. et path., 1871-1872, iv, 523 and 680.
2. Cloetta and Fischer: Arch. exper. Path. u. Pharmakol., 1906, liv, 294.
3. Clark: Jour. Pharmacol. and exper. Therap., 1913, iv, 399.
4. Heuser: Arch. internat. d. Pharmakol. et d. Therap., 1902, x, 483.

Obviously, when the blood contained none of the poison the animal receiving it required the full fatal dose of ouabain solution to cause death. When the blood contained less than the fatal dose of the poison, the amount present equaled the difference between that required to complete the reaction and that which would have been required had the blood contained none of the poison.

In every case as much as possible of the blood of the first animal was removed, and the proportion of this part to the whole of the blood in the body was calculated on the assumption that the blood constitutes 7 per cent. of the body-weight.[5] Excessive plethora was avoided in the second test animal by withdrawing a portion of its blood before injecting the defibrinated blood which was to be tested for the digitalis body. If large amounts of blood were to be tested, the withdrawals and injections were made in several portions with intervals of about five minutes between the end of an injection and the withdrawal of blood. This is illustrated by the protocol in brief of such an experiment.

PROTOCOL OF AN EXPERIMENT, IN BRIEF

CAT A.—April 20, 1911, weight, 3.3 kg. 4:40 to 4:42 p. m., injected 0.09 mg. ouabain per kg. (total 0.3 mg.)

4:44 p. m., withdrew 150 c.c. blood from carotid artery.

CAT B.—April 20, 1911, weight, 2.92 kg. 5:10 to 5:16 p. m., injected 0.09 mg. ouabain per kg. (total 0.26 mg.)

5:18 p. m., withdrew 100 c.c. blood from carotid artery.

The blood of A and B was defibrinated and treated as follows:

CAT C.—April 20, 1911, weight, 2.65 kg. 5:38 p. m., withdrew 45 c.c. blood from carotid artery.

5:39 to 5:41 p. m., injected 50 c.c. mixed defibrinated blood of A and B.

5:46 p. m., withdrew 40 c.c. blood from carotid artery.

5:50 to 5:55 p. m., injected 75 c.c. mixed defibrinated blood of A and B.

6:00 p. m., withdrew 75 c.c. blood from carotid artery.

6:05 p. m., injected 75 c.c. mixed defibrinated blood of A and B.

6:15 p. m., withdrew 50 c.c. blood from carotid artery.

6:16 p. m., injected 50 c.c. mixed defibrinated blood of A and B.

6:25 p. m., withdrew 50 c.c. blood from carotid artery.

6:30 p. m., began injection of solution of ouabain 1:100,000.

6:55 p. m., toxic symptoms; injection interrupted. (10.5 c.c. per kg.)

7:03 p. m., death, after usual symptoms of ouabain poisoning. Cat received 0.105 mg. ouabain per kg. or 0.005 mg. more than the average fatal dose for a normal animal. This proves that the animal received little or no ouabain in the blood of A and B.

It is not pretended that the method permits of an exact quantitative estimation of the drug remaining in the blood-stream, but the results are approximately correct, except in certain cases which will be discussed. It need hardly be said that experiments were made to show that, when ouabain or digitoxin was added to blood in a vessel and the blood defibrinated, the toxicity of the glucosid was not influenced perceptibly by the procedure.

It was also shown that rat's blood could be injected into the cat's vein without inducing any perceptible effects within the period of observation.

I have used ouabain and digitoxin in these experiments on the cat and dog, and have also used these two agents on the rat, but in these experiments the defibrinated blood of the rat was tested on the cat.

In the first series of experiments small amounts of ouabain were injected into the vein of the cat and the blood was withdrawn simultaneously from the artery. This procedure was due to a mistaken impression that the intact heart did not permit ouabain to pass through it.

Eleven cats, averaging 3.2 kg. in weight, received an average of 0.3 mg. of ouabain, and they yielded an average of 120 c.c. of defibrinated blood. Nine cats were used for testing the ouabain content of these specimens of blood, one cat being used in each of two experiments in which the mixed blood of two cats was tested.

In one experiment 32 per cent. of the injected ouabain was found in the blood; in another 45 per cent., and in seven experiments no positive evidence of the presence of ouabain in the blood was obtained, but it is practically certain that at least traces of ouabain were present.

In the second series of experiments amounts of the drug equal to several times the fatal dose were injected intravenously, and the blood was removed by incising the heart and aorta as soon as possible after the heart had stopped.

Large doses of the digitalis bodies are so quickly fatal that the time allowed for the disappearance of the drug from the circulation was shorter in these experiments than was desired, and, while there were differences in the rate of elimination from the blood-stream, a large proportion of the drug had disappeared from the circulation in every instance.

In two experiments in this series the cat received 5 mg. of digitoxin intravenously In one of these the blood was withdrawn after four minutes, and in the other after five minutes. No digitoxin was found in the defibrinated blood in either case. Another cat received 10 mg. of digitoxin, and the blood withdrawn after five minutes contained less than 3.3 mg. of the drug, and it may have been quite free from it.

Two dogs received a total of 17 mg. of digitoxin by the vein; they were exsanguinated after six minutes, the blood was defibrinated and mixed. The test made on another dog indicated that three-fourths of the digitoxin injected had left the circulation. In one experiment 25 mg. of ouabain—an amount equal to one hundred times the fatal dose—was injected into the vein of a cat. About two-thirds of this colossal dose had disappeared from the blood-stream when the heart stopped, after two minutes and forty seconds. The fact that the rate of disappearance in this case was about the same as that after much smaller doses suggests that the disappearance may be due to physical causes.

White rats, each weighing about 200 gm., were used in the third series of experiments.

In the first experiment the animal received 2 mg. of ouabain intravenously. It died at once and was exsanguinated by incising the heart and aorta. Three cubic centimeters of blood were obtained; this was defibrinated and when it was tested on a cat it was found to contain 0.54 mg. of ouabain, or about one-fourth of the total amount injected. I have no data for estimating the proportion of the whole blood of the rat obtained in this manner.

Another rat received 1.5 mg. of ouabain intravenously. It was exsanguinated after five minutes and the defibrinated blood (2.5 c.c.) was found to be free from the poison.

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[5] Stewart: Manual of Physiology, ed. 4, p. 51.

The third rat received 6.7 mg. of digitoxin (estimated) intravenously, and the blood was withdrawn after one minute and showed no trace of digitoxin.

These results indicate that ouabain and digitoxin leave the mammalian circulation very rapidly after their intravenous injection, but the rate of disappearance is probably variable.

I am inclined to believe that the digitalis bodies are not fixed in any of the tissues, or destroyed by them, but that they diffuse rapidly into the body fluids and that they are then eliminated from the organism. At any rate, after the subcutaneous injection of ouabain into the rat a large proportion of it may escape destruction and appear in the urine and feces in a few hours.

The ouabain thus excreted into the gastro-intestinal tract is not destroyed there, but when very much larger amounts (100 mg.) are fed to the rat, it disappears almost completely without evidences of absorption during its passage of the alimentary tract.

It would seem, therefore, that the destruction of the ouabain in the alimentary tract is accomplished through the successive actions of ferments or bacteria, and we have no evidence of the destruction of any of the digitalis bodies in the mammalian organism in any other way.

In the absence of any evidence of the rapid destruction or fixation of the digitalis bodies in the organism or their fixation in the urine, their disappearance from the circulation seems to be due to a process of diffusion into the tissue fluids, aside from certain very small amounts which may be fixed in the heart and other organs. Furthermore, it appears that the drug may diffuse back into the circulation, but somewhat more slowly than it leaves it, when the concentration in the blood becomes lower than that in the tissue, as it must through excretion into the urine or feces.

This view finds support in the result of an experiment which may be reported briefly here.

Experiment 1.—The aorta of an anesthetized cat was compressed and the lower limbs elevated to render them anemic, after which the vena cava was compressed. Twice the fatal vein dose of ouabain was then injected into the aorta below the point of occlusion. The pressure on the aorta was then released for two seconds in order to insure the distribution of the poison throughout the lower limbs, and the compression of the aorta was then maintained for five minutes, after which the circulation was restored.

No symptoms were observed for a period of thirty-five minutes following the restoration of circulation, when convulsions occurred, and death resulted after forty-seven minutes. The interval of twelve minutes between convulsions and death is especially noteworthy in view of the very large dose administered.

A similar dose of ouabain injected intravenously into a normal control animal caused convulsions in six minutes and death one minute later.

One other observation may be mentioned in support of this view concerning the simple diffusion of the drug into the tissues, but it is less striking than the one just related.

Experiment 2.—A cat weighing 2.55 kg. was given a dose of 25 mg. of ouabain intravenously, an amount equal to one hundred times the fatal vein dose. Death ensued in three minutes; the blood was withdrawn at once, and the liver, weighing 74.2 gm., or about 3 per cent. of the total body-weight of the animal, was found to contain about 4 per cent. of the total amount of ouabain injected.

It is interesting that the wholly insoluble digitoxin leaves the blood-stream at least as rapidly as the very soluble ouabain, just as we have observed that the insoluble drug is absorbed more readily from the gastro-intestinal tract than the more soluble members of the group.

CONCLUSIONS

We have no evidence of the rapid destruction of the fixation of the digitalis bodies in the animal organism.

Certain of the digitalis bodies leave the mammalian circulation very rapidly, but we have no evidence that they are stored in greater concentration in one tissue than in another.

414 East Twenty-Sixth Street.

ABSTRACT OF DISCUSSION

Dr. Torald Sollmann, Cleveland: Dr. Hatcher's explanation of the extremely rapid disappearance of the digitalis substances from the circulation is very likely correct, but the experiments reported do not, I think, prove the point. I should accept the proof that digitalis is not absolutely fixed in the tissues, since it can still be extracted or washed out of them; but there may be a quantitative difference, the tissues having a greater affinity than the blood. This could probably be determined by measuring the rate of disappearance from the blood when in contact with various tissues, heart, liver, etc., in the same way that the disappearance of epinephrin has been investigated.

Dr. E. D. Brown, Minneapolis: Since digitalis bodies are so prone to decomposition, it occurs to me that there may be some destructive principle in the blood itself which might account for the rapid disappearance, and I should like to ask Dr. Hatcher whether he added any of these digitalis bodies directly to the blood and allowed time equivalent to the mammalian circulation, and time required to defibrinate the blood.

Dr. Robert A. Hatcher, New York: It was merely offered as a suggestion that the digitalis bodies diffuse into the body tissues. While I have tried to determine whether or not any of the tissues fix the digitalis bodies, I wish to avoid a discussion of that phase of the question at this time, except that I may say that no one has been able to find that any of the body tissues fix large amounts of these bodies. While Cloetta did seem to find that certain tissues fixed a portion of the secret preparation known as digalen, his results are not universally accepted.

VENOUS BLOOD-PRESSURE AS INFLUENCED BY THE DRUGS EMPLOYED IN CARDIOVASCULAR THERAPY *

JOSEPH A. CAPPS, M.D.
AND
S. A. MATTHEWS, M.D.
CHICAGO

When one considers the enormous amount of attention that has been directed to the changes in arterial pressure, it appears that the study of the venous pressure has been neglected. There has been no neglect, however, in the study of the waves in the venous pulse. It is fair to say that the investigations of sphygmographic tracings of the venous pulse have thrown as much light on cardiac and circulatory phenomena as have those of tracings of the arterial pulse. Is it not possible that a knowledge of variations in venous pressure may prove as valuable as that of variations in arterial pressure?

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Venous pressure has excited the interest of physiologists with special reference to vasomotor influences. It is well known that the arteries of the body are supplied by vasomotor nerves which largely determine the volume and rate of flow of blood within them. Formerly the rôle of the veins in the circulatory system was looked on as an essentially passive function. It was assumed that a rise in arterial pressure from any cause is accompanied by a fall in venous pressure, and that a fall in arterial pressure is associated with a rise in venous pressure. Such a conception of the venous pressure is no longer tenable.

It has been demonstrated by Mall[1] that the portal vein is controlled by constrictor fibers from the splanchnic nerves, and considerable proof has been offered by Roy and Sherrington[2] to show that the systemic veins are also supplied by vasomotor nerves. Other valuable contributions to our knowledge of venous pressure have been made by Frey,[3] von Basch,[4] Bayliss and Starling[5] and Sewall.[6] The importance of the subject is indicated by the hypothesis recently advanced by Henderson[7] to explain shock, which he believes is due to failure neither of the heart nor of the arterial system, but of the venopressor mechanism.

On the clinical side investigations are still meager. Calvert[8] called attention to the value of a rising venous pressure as a danger signal in pleural effusions. Hooker and Eyester[9] carried out a series of observations on venous pressure changes in various diseases of the heart.

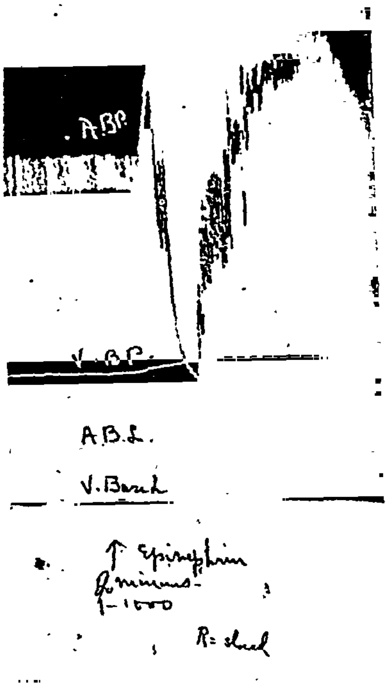

Chart 1.—Tracing to illustrate the rise in venous pressure after large dose of epinephrin. Note the slow interrupted arterial strokes, showing impairment of heart-action.

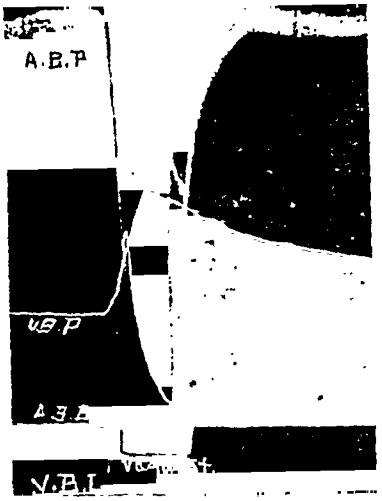

Chart 2.—After electrical stimulation of vagus nerve the arterial pressure falls and the venous pressure rises. Compare with action of epinephrin.

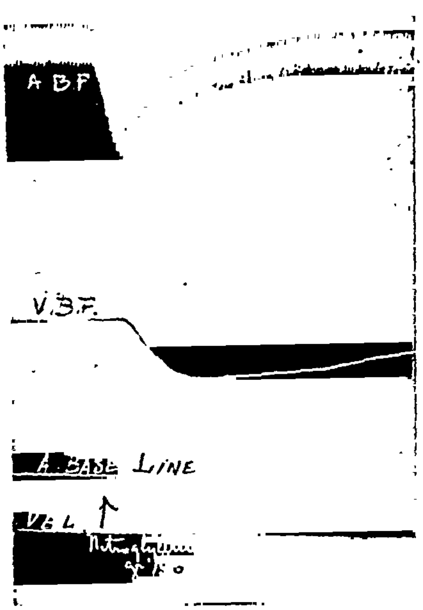

Chart 3.—Following administration of nitroglycerin there is a rapid fall in both venous and arterial pressure, with gradual recovery.

That the veins, like the arteries, have the power to maintain their blood-pressure within wide limits was emphasized by Moritz and Tabora,[10] who found that it was necessary to withdraw over 500 c.c. of blood by venesection in a human being, before any appreciable fall in the venous pressure occurred. The effect of drugs on venous tension has been very little studied by either pharmacologists or clinicians. The best research of this kind is by Plumier,[11] who in a general survey of the subject records a number of valuable experimental data.

Our experiments were confined to a comparison of the influence of cardiovascular stimulants on venous pressure with that on arterial pressure. Dogs were used and kept under light ether anesthesia during the observations. The venous pressure was taken by the method of Moritz and Tabora, in which a hollow needle is inserted in the femoral vein and the pressure transmitted to a water manometer. A float was devised by Dr. Matthews to carry the delicate fluctuations of the fluid to a pen, which made tracings on a drum. The arterial tension was recorded from the carotid in the usual manner. The drugs were injected, as a rule, into the femoral vein, opposite to the one from which the pressure was taken.

The Digitalis Group.—Three preparations of this group were used intravenously: digitalin in doses of from 1/30 to 1/20 grain; digipuratum solution, 1 c.c. (equal to 1½ grains of the powder), and strophanthin from 1/120 to 1/60 grain. A moderate and gradual rise in arterial pressure always ensued. The venous pressure was not materially altered in any instance.

Epinephrin.—Doses varying from ½ to 10 minims of a 1:1,000 solution of epinephrin were employed. This was further diluted in 2 c.c. of normal salt solution and slowly introduced into the circulation. The arterial tension responded always with a prompt, rapid rise. With a small dose the venous pressure remained the same, but with the larger amounts the venous pressure rose from 10 to 80 mm. A large dose often inhibited the heart-action completely for a few seconds or caused slow, forcible contractions that produced a temporary fall in the arterial curve with slow, long strokes such as are seen after electrical stimulation of the vagus nerve. Indeed, Cushny[12] considers that the slowing of the heart from epinephrin is due to excitation of the vagus center in the medulla. The rise in venous pressure was coincident with this halting, irregular action of the heart, and it remained high until the normal rhythm returned. We found likewise that, in the slow or inhibited heart-action from exciting the vagus nerve with the faradic current, the venous pressure rose.

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[1] Mall: Arch. f. Physiol., 1892, p. 409.
[2] Roy and Sherrington: Jour. Physiol., 1890, xi, 85.
[3] Frey: Deutsch. Arch. f. klin. Med., 1902, lxxiii, 511.
[4] Von Basch: Wien. med. Presse, 1904, xx, 962.
[5] Bayliss and Starling: Jour. Physiol., 1894, xvi, 159.
[6] Sewall, Henry: Experiments on Venous Blood-Pressure and Its Relation to Arterial Pressure in Man, THE JOURNAL A. M. A., Oct. 20, 1906, p. 1279.
[7] Henderson: Am. Jour. Physiol., 1910, xxvii, 1.
[8] Calvert: Bull. Johns Hopkins Hosp., February, 1908.
[9] Hooker and Eyester: Bull. Johns Hopkins Hosp., 1908, p. 274.
[10] Moritz and Tabora: Verhandl. d. Ver. f. inn. Med. zu Berlin, 1909, p. 379.
[11] Plumier: Etude experimentale des variations de la pression veineuse, doctor's thesis, Liége, 1909.

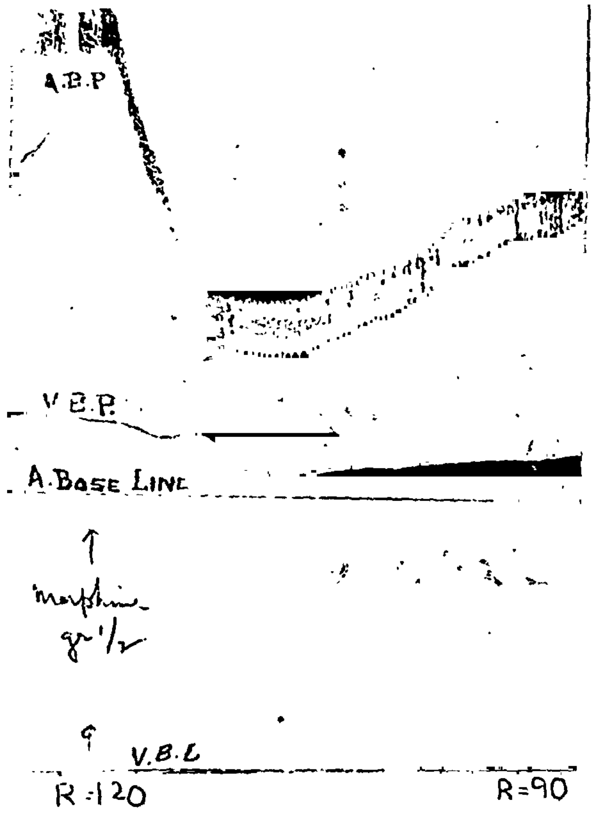

Chart 4.—After large dose of morphin a marked fall in arterial and a moderate fall in venous pressure.

Hence it seems probable, as Plumier states, that the rise in venous pressure after large doses of epinephrin is explained by the halting heart-action rather than by any venomotor stimulation.

Pituitrin (1 c.c. of a 10 per cent. solution).—This drug acted similarly to epinephrin on arterial and venous pressures, although the changes were less pronounced.

Caffein.—Administered in the form of the benzoate with sodium from ½ to 2 grains, this drug induced a slight increase in the arterial pressure, but did not appreciably influence the venous pressure.

Strychnin Sulphate.—This drug affected neither arterial nor venous pressures until the dose was so large as to cause muscular contractions. Under these conditions, of course, the pressure in the veins rapidly rose.

The Nitrites.—These, administered by inhalation in the form of amyl nitrite or by injection of nitroglycerin from 1/150 to 1/50 grain, caused a decided fall in both arterial and venous pressures. As the heart-action was accelerated and was regular, it does not appear to be concerned in this general lowering of pressure. The drug apparently acts by depressing the nerve endings in the veins as well as in the arteries.

Morphin.—In moderate doses of from 1/8 to 1/6 grain, this drug tended to lower the arterial tension, without influencing the venous pressure. After large doses, from ¼ to ½ grain, the arterial pressure often fell rapidly and the venous pressure also sank to a slight degree. The depressing action of morphin on the venous tension was much less marked than that of nitroglycerin.

Alcohol.—Given in strength of from 25 to 30 per cent., from 10 to 50 c.c., the smaller amounts of alcohol depressed somewhat the arterial pressure, but did not influence the venous; doses large enough to markedly lower arterial tension resulted in augmenting the venous pressure. It was noted that the rise in venous pressure was proportionate to the degree of disturbance of heart-action.

From these observations it is seen that a rise in venous pressure occurred only after large doses of epinephrin, pituitrin and alcohol. Since in all these experiments the heart-action was seriously impaired, we are justified in explaining the rise of pressure in the veins by the development of stasis rather than by any vasomotor influence.

A fall in venous pressure took place after administration of the nitrites and of large doses of morphin. In these experiments the heart-action was not impaired. Hence the fall in venous tension may be attributed, with a high degree of probability, to a direct influence on the venomotor mechanism.

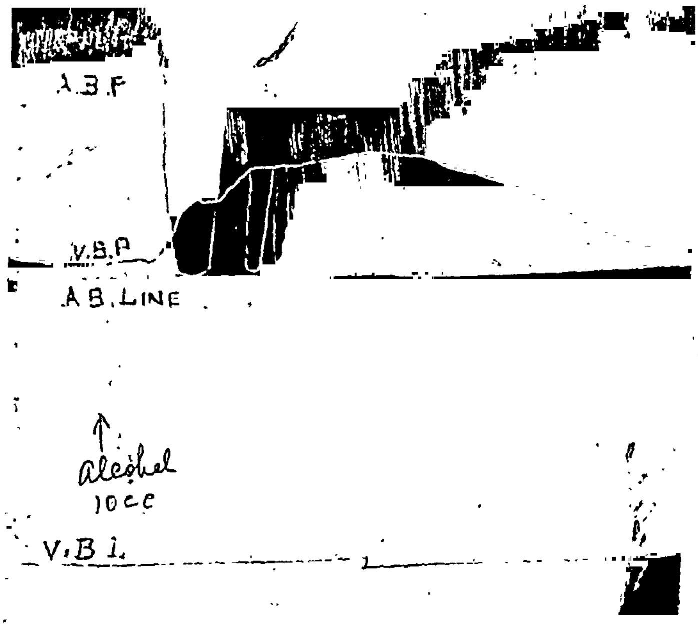

Chart 5.—Excessive doses of alcohol cause a temporary fall in arterial tension and sometimes a rise in venous pressure.

122 South Michigan Boulevard.

ABSTRACT OF DISCUSSION

Dr. Joseph L. Miller, Chicago: These results were strikingly like those seen in experimental pulmonary edema. If a cannula, connected with a manometer, is placed in the pulmonary artery and another in the carotid it will be noted that at the time pulmonary edema occurs there is a marked rise of pressure in the pulmonary artery. When epinephrin is used for this purpose, there will often be a marked rise in the carotid pressure, and then a little later a marked rise of pressure in the pulmonary artery. At the point at which the pressure in the pulmonary artery rises, pulmonary edema begins to develop. When the exposed heart is examined at this time, it will be noted that at first there is a marked dilatation of the left ventricle, due to the increased arterial pressure. Finally a point is reached at which the left ventricle is no longer able to empty itself against the increased resistance. This causes a backing up of the blood in the pulmonary circulation, a rise in pressure in the pulmonary artery and the appearance of pulmonary edema.

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[12] Cushny: Pharmacology and Therapeutics, Philadelphia, 1906, ed. 4, p. 400.

Dr. Clyde Brooks, Pittsburgh: I was present at some of Dr. Capps' experiments. He is correct in pointing out that venous blood-pressure is a subject which has been much neglected. I have studied the subject from some points. Dr. Luckhardt and I studied the blood-pressure of the unanesthetized animal during vomiting. Recently I assisted Dr. Simpson, Chairman of the Section on Obstetrics, in physiologic experiments connected with his address in which we studied arterial and venous pressure of animals in the Trendelenburg, horizontal and Fowler positions, together with the effect of intravenous injections of large amounts of salt solution in the effort to embarrass circulation by increased tension on the right heart. It was found that in case the peripheral resistance was increased up to the point at which the left heart is not overpowered, there is a decrease in the venous pressure. But with vasomotor dilatation, or peripheral dilatation, there is venous hypertension which interferes with the heart's activity. Anything that would cause a slowing of the heart's movements and weakness of the beats would cause congestion of the right heart. In the same way Dr. Simpson and I found that when the animal is raised to the Trendelenburg posture, or salt solution is put into the right vena cava through one of the branches, there is an increase in blood-pressure on the left side; but in case the heart is weakened by disease, hyperthyroidism, or long exposure to the Trendelenburg posture, an increase in the venous blood-pressure results. The question as to whether vasomotor constriction or vasodilatation of the medium sized veins will cause a rise at the site of the great veins seems to me a question as to what the result would be. If the heart is able to take care of the amount of blood carried to it there will not be a marked increase in pressure; but if the heart is not able to do this, the blood will dam up. There is one factor in Dr. Capps' results that must be considered, and that is the effect of the anesthetic on the blood pressure. In my experiments I endeavored to avoid that objectionable influence by using a T-cannula put in at previous operation. I have not studied all the drugs studied by Dr. Capps. Alcohol and digitalis are the two drugs I have studied especially. Dr. Capps has done an excellent and important piece of work; some modifications of the results may appear, however, when the drugs are studied on the unanesthetized animal.

Dr. Torald Sollmann, Cleveland: There seem to be two possible ways of influencing the venous pressure, each of these apparently acting in only one direction, cardiac insufficiency producing rise of pressure, and a vascular dilatation producing a pronounced fall of pressure. The latter is something which theoretically one might not altogether have expected. At least there might be two factors concerned there. Working with mechanical models one would expect that the lessened resistance in the arterial capillary system would increase the venous pressure. As Dr. Capps points out, this does not seem to occur. Why I do not know. The fall of pressure which one gets with the dilatation would therefore seem to indicate, as Dr. Capps believes, that there is an inhibition of the venomotor mechanism, that the veins themselves dilate, lessening their pressure. If that is so, one should also expect that a constricting action on the veins would tend to increase the venous pressure. Now it has been shown repeatedly that epinephrin does have a constricting effect on the vein. The tracing of Dr. Capps does not disprove this. The morphin phenomenon is entirely puzzling. The explanation which Dr. Capps gives, that the morphin must have a dilator effect on the veins, is not, of course, in consonance with what we know of the action of morphin. It would be very interesting to try whether or not morphin has any direct effect on the venomotor mechanism. There is one point that is worth considering: all the vasodilator measures mentioned here which give pure dilatation have been such as act on the peripheral terminations. Has Dr. Capps had any experience with cutting out the vasomotor center, without acting peripherally on the veins; for instance on section of the cord? Alcohol acts on the center, but this action is complicated by its cardiac action. Another problem which Dr. Capps probably contemplates taking up, is the effect of the principal therapeutic measures on pathologic conditions of the circulation, such as can be easily produced. The effect of epinephrin in producing rise of venous pressure and cardiac insufficiency means that the heart is overloaded by the excessive resistance. If a heart were already overloaded owing to loss of tone, the effects of epinephrin would perhaps be exactly reversed. We must be rather cautious in applying the present experimental results to the therapeutic use of these drugs, when we are already dealing with a pathologic condition in the circulation. I simply wish to mention that as a precaution.

Dr. Alexander S. von Mansfelde, Ashland, Neb.: I wish to draw attention to a defect that I find in Dr. Capps' work; it may be an old man's notion, although I find more and more that those carrying on experimental work lose sight of the fact that the body of man is not composed only of nerves and canals through which fluids pass. Nowhere is consideration given the fact that the body is composed of many millions of cells and that the venous pressure that Dr. Capps has so correctly pictured is largely owing to them and their activities. In this I assume an entirely different position from that of Dr. Capps. Now in the case of morphin and alcohol particularly, the venous pressure is somewhat of a puzzle as has been suggested, but we must take into consideration the fact that alcohol is primarily a cell irritant that is accompanied by all the physiologic functions of activity in the cell. If you take into consideration the fact that morphin does the very opposite in its relation to the cell life, laying it low, you must expect some change in the flow of the fluids that take part in the activity of that cell life. In other words, it is not only the *vis a fronte* which is represented by your heart, but it is also the *vis a tergo* that has very much to do with the matter. I wish that Dr. Capps would kindly take into consideration, in his next experimentation, the power of the cells of the body themselves in influencing the blood-pressure, both arterial and venous, because they have motion, activities of their own. His pictures will not be much different, but it seems to me that he will have a clearer way of expressing just what is happening when he gives these drugs. This idea of activity of cell life was explained seventy-five years ago by Sobernheim very clearly and distinctly.

Dr. J. A. Capps, Chicago: Dr. von Mansfelde referred to the influence of the cells on venous pressure. This influence is difficult to demonstrate and yet it may be of considerable importance. In the development of his theory of shock by acapnia, Yandell Henderson emphasizes not only the venodilatation, but the loss of tonus in the cells. The results obtained by the use of drugs in animals may not of course be identical in man. We know, for example, that the dog is not especially susceptible to morphin. At the same time the effect of most drugs on the arterial and venous circulation is similar in animals and human beings. In man observations on the venous pressure have been made without the employment of anesthetics by Mortiz and Tabora, but comparatively few observations have been made on the action of drugs. A new field is open for the study of cardiovascular stimulants and depressants on the venous pressure by their method. Epinephrin seems to have no effect on venous pressure until given in large doses, when the heart action is slowed and interrupted. Then the tracing shows a rise in venous pressure which strikingly resembles that seen after strong electrical stimulation of the vagus nerve.

TWO UNUSUAL CASES OF ECTOPIC PREGNANCY

ONE A TRIPLET

J. F. BALDWIN, M.D.
Surgeon to Grant Hospital
COLUMBUS, OHIO

Ordinary cases of ectopic pregnancy are of no scientific interest whatever, but occasionally a case occurs so much out of the ordinary run as to be worthy of permanent record. The following two cases, I think, come under that head, the first case being almost unique because of its accidental discovery, and the presence of the triplets. So far as I know, only two other cases of triplets have been reported, one by Cruzen, the three being in one tube, and the other by Launay[1] with twins in one tube and a single fetus in the other. The second is notable because of the symptoms being rather those of the menopause than of a pregnancy, the presumptive diagnosis being made entirely by the character of the pelvic mass.

Case 1.—Mrs. M., aged 37½, married 19½ years, referred by Dr. Tracey, had two children, the youngest aged 16; labors natural. Miscarriages one, thirteen years before at six weeks; no assignable cause; no trouble. Patient consulted me Dec. 2, 1912, for relief of the procidentia which had been very annoying for the previous two years. Had had a good deal of local treatment, but without benefit. Had menstruated regularly and normally two weeks before. My own examination showed what seemed to be a hyperplastic uterus, with almost complete procidentia. I advised the usual repair from below, and then probably a hysterectomy with implantation of the ligaments into the stump. The operation was made the next day.

I first curetted, removing a good deal of débris, but nothing characteristic. The vaginal walls and perineum were then carefully repaired. When the abdomen was opened, the dark color of the peritoneum as it was reached caused both my assistant and myself to remark that it looked like an ectopic pregnancy. When the uterus was reached both tubes were found distended, and the right one leaking. The tubes were removed in the usual way, and then because of the long-standing uterine trouble, and the hyperplastic condition, a supravaginal hysterectomy was made in the usual way. On examination two fetuses were found in the left tube, and one in the right. The embryos were of the same size, about as large as peas. They were turned over to the hospital pathologist for more minute examination, who reported that all three were embryos and of the same age. The patient was greatly surprised when told of the find, as she had not suspected the possibility of a pregnancy.

Case 2.—Mrs. G. L., aged 47, married twenty-five years, had two children, the youngest 16; no miscarriages. Had been operated on seven years before for ectopic pregnancy of about twelve weeks. Only the affected tube was removed, with the corresponding ovary. Consulted me Jan. 4, 1913. She stated that she had failed to menstruate in the previous June, had the usual flow in July, missed in August, flowed again in September, missed in October and November, but flowed again early in December. The flow was a mere dribble, and she had been dribbling from that time to the date of her consultation. Had had a good deal of pain through the lower abdomen, but no history of sudden pain with any collapse.

On examining the patient I found the uterus high up and pushed forward by a mass in the culdesac. This mass was boggy and tender. Its general "feel" was that of an ectopic pregnancy. I explained to her that except for her age, and the "dodging" menstruation for several months, I should have made a positive diagnosis of ectopic pregnancy, but that under the circumstances I should make no positive diagnosis since operative intervention was clearly indicated. At the operation next morning, a fetus 2 inches in length was removed from the remaining tube. The uterus itself was bedded in extensive adhesions, and the operation was therefore completed by a supravaginal panhysterectomy with implantation of the ligaments.

Each of these patients made an uneventful recovery.

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[1] Cruzen and Launay: Cited by McDonald, Ellice, and Krieger, William A.: Bilateral and Multiple Ectopic Pregnancy, The Journal A. M. A., June 7, 1913, p. 1766.

LACTIC-ACID BACILLUS SPRAY FOR DIPHTHERIA

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ROCHESTER, MINN.

A spray of lactic acid bacilli was recently used in available diphtheria cases in Rochester with the view of clearing up refractive diphtheria carriers and in an attempt to find for spraying some organism which is not foreign to human tissues and is not regarded as pathogenic.

The success was rapid and marked, but with only a few trials no definite statements can be made. This suggestion is hereby offered that others may try the lactic acid bacillus spray, as the staphylococcus is now being used for overriding local bacterial infections, so that its usefulness may be measured or the inadvisability of its use demonstrated.

Four cases of diphtheria appeared in the Rochester State Hospital for the Insane between Jan. 18 and Feb. 9, 1913. The last patient, a nurse in the isolation infirmary, showed no symptoms and was a secondary case. The other three patients, two of them nurses, appeared within eleven days. An appeal was made to the health officer for assistance. There was only one possible connection between any two of these cases; the patients had all had their meals prepared in a certain kitchen. Cultures were made from fifteen cooks and kitchen attendants, and a carrier was promptly located. She denied ever having had diphtheria. After her isolation no more cases developed in the institution.

To clear this normal throat of virulent diphtheria bacilli antitoxin was given subdermally followed by the daily local application of solutions of silver nitrate, phenols and iodin, but without avail. For the first two weeks the bacilli were found only in the throat-cultures. After eight positive cultures had been obtained in seven weeks under various treatments, the nose and throat spray of *Bacillus acidi lactici* was commenced. At the suggestion of Dr. A. H. Sanford, bacteriologist to St. Mary's Hospital, this lactic acid bacillus was employed because it is a good grower and not foreign to man, and is not classified as a pathogenic pus-producer. A one-day or two-day culture on agar was washed off in sterile normal salt solution and used in a sterile atomizer. The live organisms were required; hence, no antiseptic was used in the spray or on the mucous membranes. The spraying in the first case was continued one week and negative cultures were obtained, without subsequent positive growths.

The method was next employed in four cases in May, 1913. Two of the patients, adult brothers, after administration of antitoxin, were given daily pharyngeal swabs of full strength or of 50 per cent. tincture of iodin for twenty days, but with variable cultural results. Antiseptics were then discontinued and the use of lactic-acid bacillus spray was instituted. From these and another case, sprayed one noon, the next noon and the same evening, cultures were made the following morning, no diphtheria bacilli being found; without further spraying the second negative culture was obtained two days later.

An adult with a severe case of diphtheria in which the entire pharynx was blocked with membrane which extended over the uvula and tonsils, was given 33,000 units within forty-eight hours. Tincture of iodin was then used locally but without effect on the membrane within ten days. Thereon the lactic-acid bacillus spray was used three times within thirty hours, the membrane rapidly decreasing and practically disappearing within three days. Even with small vestiges of the membrane present on the tonsils reports of negative cultures were returned from the state laboratory.

In order not to lose time in advancing preventive medicine, these few results and suggestions are offered, but without too much enthusiasm. It seems advisable for others to assist in working out the question of employing the lactic-acid bacillus spray, not only for the clearing of diphtheria carriers and convalescent cases, but also in the treatment of the disease. When unexpectedly encountering a case of rural diphtheria, the physician, if without antitoxin or antiseptics, may perhaps find some advantage in swabbing or douching the nose and throat with ordinary sour milk.

TONSILLITIS FOLLOWING USE OF STAPHYLOCOCCUS SPRAY

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In view of the recent numerous reports regarding the use of staphylococcus cultures for the purpose of clearing the throat of diphtheria bacilli, it seemed that a report of the following case might be of interest.

History.—L. L., aged 18, schoolgirl, on Oct. 26, 1912, sought medical advice for the relief of continuous colds and constant nasal discharge. The immediate family of the patient were well and had never suffered from any throat or nasal diseases. There were three cases of cancer in the mother's family and there was history of Bright's disease on the paternal side. The patient was well and strong. She had had whooping-cough, measles and mumps and had always suffered from frequent colds and tonsillitis. Four years previously she had had adenoids removed and tonsillotomy done, with partial relief of the condition. She had had no attacks of tonsillitis since. For the last three months, following acute rhinitis, there had been constant nasal discharge.

Physical Examination.—The patient was a large, well-developed girl; both tonsils were large and the crypts contained cheesy exudate. Nasal examination showed a markedly deflected septum with obstruction of left nasal passage.

Treatment and Course.—October 31, the septum was straightened by Dr. M. L. Cushman. Recovery was rather slow and there was slight persistence of nasal discharge. November 14, the patient had a chill and complained of severe sore throat; November 16, a small patch of membrane appeared in the nasopharynx, culture from which, November 17, showed pure growth of Klebs-Loeffler bacillus. The membrane by this time had extended forward in the nose and was present on the right tonsil. The uvula was extremely edematous but showed no membrane.

Three thousand units of antitoxin were given with immediate improvement; November 22, the throat and nose were free from membrane. The patient's general condition was excellent throughout and at no time did she feel particularly ill. Swabs from the nose and throat on November 26 and December 2 both showed pure culture of Klebs-Loeffler.

As the patient was anxious to get back to boarding-school at the earliest possible moment, a pure culture of *Staphylococcus aureus* emulsified with sterile normal salt solution, prepared by Dr. M. L. Holm, state bacteriologist, was given her with directions to spray the nose and throat three times a day. She began the use of this at 8 a. m., December 3, the throat being normal in appearance.

December 4, at 10 a. m., the patient had a slight chill and sore throat. December 5, she was confined to bed, had complete anorexia, was nauseated and vomited; the bowels were constipated; temperature was 101.7; pulse was 120; there was profuse nasal discharge; there was no membrane in the throat and nose but the tonsils were much swollen and covered with discrete yellowish spots. At 7 p. m., the temperature was 103, pulse 122, and the cervical lymph-nodes were markedly enlarged.

One grain, broken doses, of calomel and five-grain doses of aspirin every three hours were ordered; during the night, the temperature steadily dropped to 99.5 and the pulse to 92. Recovery was uneventful but slow. The cervical lymph-nodes were enlarged and tender for about ten days. The nasal discharge continued profuse during this time and about five days after the beginning of the attack there was some swelling of the uvula. The patient felt much sicker during the attack of tonsillitis than during the initial attack of diphtheria.

Smears and culture from the throat and nose, December 5, showed abundant staphylococcus growth with a few diphtheria bacilli from the culture in the throat; December 10, the culture showed no diphtheria bacilli but showed numerous staphylococci with a few pneumococci and streptococci.

Thanks are due Dr. M. L. Holm for furnishing the staphylococcus spray and making the cultures.

Tussing Building.

AN ANOMALOUS CASE OF WHITE-SPOT DISEASE *

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The following case is so interesting, both clinically and histologically, that it seems worthy of being reported in detail, especially as it may help to throw some light on the rather obscure relationship existing between certain cases of morphea guttata and lichen planus atrophicus et sclerosus.

History.—May 13, 1912, Dr. J. J. Richardson of Washington referred to me a white woman aged 32, who complained of some spots on her neck. The past and family histories were unimportant save that the patient had lived in Porto Rico, under the most favorable circumstances, for the past ten years. In spite of the most careful questioning no trace of syphilis could be elicited. Her husband had died twelve months before from an acute attack of appendicitis, and she had been considerably prostrated by the shock and had been somewhat depressed ever since.

In August, 1911, she first noticed some white spots on the back of her neck. As they gave rise to no symptoms she was unable to say just how long they had been present; but considering how conspicuous they were it seems improbable that they could have been of long duration without her attention being called to them. She was not aware of the presence of any other spots. The present condition of her neck is well shown by the unretouched photograph (Fig. 1).

Examination.—The most striking feature of the lesions was their snow-white color, not at all the color of an ordinary scar, but whiter and more glistening. On the neck there were two groups of spots, one just at the hair margin and the other about 8 cm. below. Both groups were almost in the midline. The upper patch contained about a dozen lesions and the lower patch about forty. The spots varied from 1 to 5 mm. in diameter, were sharply defined, more or less angular and

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, 1913.

showed no central depression. They were distinctly macular; and no infiltration could be made out; in fact, rather the reverse was true, for they were slightly softer than the surrounding normal skin. The skin over them was dry, thin and wrinkled, and the tactile sensation was decreased but not entirely absent. The surrounding skin was normal with the exception of a few freckles.

Four days later a careful examination revealed many similar lesions. There were three small patches around the waist, just under the belt, one on the right side of the neck near the clavicle, one on each thigh, one on the back of the right knee and one on the perineum. None of these patches contained more than ten spots; in fact, the majority of them contained not more than four. The lesions were white, slightly depressed, and to the eye resembled scar tissue, for they totally lacked gloss. A slight central depression could be made out with a lens, but not with the naked eye. To the touch the spots did not feel like scar tissue, for they were slightly softer than normal skin.

The clinical diagnosis of morphea guttata was made, for the appearance of the lesions seemed to rule out lichen planus atrophicus.

A strong irritating treatment containing resorcin was at first used, but beyond inflaming the skin it did absolutely no good. Vigorous massage or the use of suction cups would frequently cause hemorrhage into the lesions but not into the surrounding tissues, and when this hemorrhage cleared up it was difficult to see the original white spot. In from two to three weeks, however, the gloss would begin to reappear, and the lesion become whiter.

Laboratory Investigations.—The Wassermann was faintly positive. The hemoglobin was 90 per cent. by a standardized Sahli instrument. The red blood-cells numbered 4,900,000, and the white cells 9,000. A differential count of 500 leukocytes gave the following results: polymorphonuclears, 57.2 per cent.; eosinophils, 2.4 per cent.; large mononuclears, 0.4 per cent.; small mononuclears, 38.0 per cent.; transitionals, 1.6 per cent., and mast-cells, 0.4 per cent. The urine had a specific gravity of 1.020 and contained no albumin or sugar, and no excess of indican. Microscopic examination revealed the absence of casts and red and white blood-cells.

Cultures taken from the serum expressed from the lesions gave no growth of bacteria, nor did smears show any micro-organisms of any kind. One of the lesions on the flank was excised and fixed in alcohol. Sections were stained with hematoxylin and eosin, polychrome methylene blue, and neutral and acid orcein, both singly and in various combinations. All gave practically the same results. The most striking feature of all sections was the almost complete disappearance of collagen and elastin in a circumscribed area in the subpapillary portion of the corium.

The horny layer was a trifle thickened but was otherwise normal. In the center of the lesion there was a gaping follicle almost completely filled with keratin. The granular layer was normal, but the prickle-cells had almost entirely disappeared. The basal cells showed marked hydropic degeneration, nearly every one containing one or two vacuoles. Pigment was entirely absent. The wavy line between the rete and corium was almost obliterated. The rete stained as usual.

In the corium there was a sharply circumscribed area corresponding in size to the macule, and extending about half the depth of the corium, in which the collagen had undergone marked rarefaction and degeneration. The fibrous tissue of this area stained very faintly with eosin and orcein, and not at all with any of the other stains. There was marked intracellular edema, only a few strands of fibrous tissue being present. Each fiber was quite separate from the others. The nuclei had entirely disappeared from all of these fibers. In this area also the elastin had almost entirely disappeared, and what little remained was in the form of short, almost straight fragments. Within the degenerated area there was no cellular infiltration, with the exception of a few stray cells around the edges. No glandular elements were found although the entire lesion was sectioned. Very few blood-vessels were found, only one or two being present; in them the walls were lax and shapeless and only the endothelial elements remained. No definite lymphatics were seen. One muscle was found, intact. The entire lesion was walled in by a moderately thick infiltrate, consisting of small round cells and fixed tissue-cells. This infiltration was especially marked around the blood-vessels. The blood-vessels outside of the degenerated area were not changed, nor were the glandular structures or muscles. In the degenerated area just inside of the infiltration proper a curious type of cell was found about the size and shape of a plasma-cell, but with an oval nucleus in the center, and a strongly acidophilic protoplasm. The granules were about equal in size to those in an eosinophil. All stages of these cells grading into typical fibroblasts were found. These cells were probably the acidophilic plasma-cells of Schridde.[1]

Treatment and Result.—At the end of six weeks the patient left town for the summer, with instructions to alternate between mercury by mouth and Donovan's solution. On October 16 she reappeared, stating that although she had obeyed instructions she was no better. Examination showed that the lesions on the body had not changed, but that the spots on her neck had assumed a different aspect. They were still white, but with a faint yellowish tinge, and were not so glistening as formerly. Their general character and size were still the same: they had not become confluent, but nearly every one contained from two- to four-minute honey plugs. Further biopsy was not permitted. On the next day the patient left for Porto Rico.

When first seen this case was almost clinically typical of the morphea guttata cases, but when later seen more closely resembled the lichen planus atrophicus cases.

Histologically the picture was totally different from that usually associated with lichen, but more nearly resembled Johnston and Sherwell's[2] case of "white-spot disease."

A critical comparison of the various types of "white-spot" cases is necessary in order to determine in just what group this case should be placed. Five groups of cases have been described; namely, "white-spot" disease, morphea guttata, lichen planus atrophicus et sclerosus of Hallopeau,[3] lichen albus of von Zumbusch,[4] and the *kartenblattähnliche Sklerodermie* of Unna.[5] Further work by Montgomery and Ormsby[6] has shown that the cases of "white-spot" disease are the same as the cases of morphea guttata, a group in which Unna's two cases are now placed. Recent work by Vignoli-Lutati,[7] Ormsby[8] and others has shown that lichen planus atrophicus is the same disease as lichen albus. There are a few cases, however, which do not entirely fill the conditions of either group, namely, the case of Johnston and Sherwell[2] and the case of Riecke.[9]

Etiology.—The origin of the morphea cases is in doubt. The disease nearly always occurs in women, either young or middle-aged, but beyond that nothing is known. The lichen planus atrophicus cases are now regarded as unusual forms of lichen planus in which the lesions begin as white papules, for the form of lichen planus which begins in the usual way and later becomes atrophic must be carefully excluded. Again the etiology is unknown; the disease occurs in nervous women over 30 years of age.

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1. Schridde: In Adami: *Inflammation*, New York, 1907, p. 66.
2. Johnston and Sherwell: Jour. Cutan. Dis., 1903, xxi, 302.
3. Hallopeau: Ann. de dermat. et de syph., 1889, Series 2, x, 447.
4. Von Zumbusch: Arch. f. Dermat. u. Syph., 1906, lxxxii, 339.
5. Unna: Handbuch der Pathologie der Hautkrankheiten, Berlin, 1894, p. 1121.
6. Montgomery and Ormsby: Jour. Cutan. Dis., 1907, xxv, 1.
7. Vignoli-Lutati: Dermat. Wchnschr., 1912, liv, 661.
8. Ormsby: Lichen Planus Sclerosus et Atrophicus, The Journal A. M. A., Sept. 10, 1910, p. 901.
9. Riecke: Arch. f. Dermat. u. Syph., 1909, xcix, 181.

Symptomatology.—Lichen atrophicus begins as a papule, white, angular and firm to the touch, each papule containing either comedo-like pus or corresponding depressions. The lesions may become confluent and later leave scars. Circumscribed scleroderma is not distinctly papular, and the lesions do not contain spines or depressions, and do not become confluent. A slight inflammatory halo may be found in both conditions.

Histopathology.—In morphea the epidermis is practically intact, although there is frequently hyperpigmentation of the basal layer. In the corium there is hypertrophy of the collagen (the fibers running in straighter bundles than usual), diminished number of blood-vessels, dilated lymph-spaces, excess of pigment in the corium and infrequency of glandular structures. There is a general sclerotic condition of the corium.

The histopathology of lichen atrophicus as studied by Ormsby and others corresponds in a general way to the pathology of lichen planus, except that the infiltration is deeper. The horny and granular layers are usually thickened, while the remainder of the rete is atrophied. The wavy line between the rete and corium is missing. The upper portion of the corium shows collagenous hypertrophy. The elastin is reduced in amount. A cellular deposit is present deep in the corium and about the blood-vessels, glands and follicles. Horny plugs are present in the sweat-pores and the ducts show hyperkeratosis.

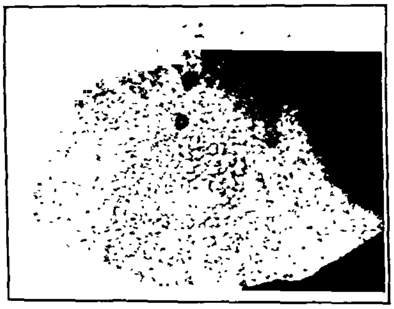

Fig. 1.—Neck of patient when first seen.

Prognosis.—Both diseases end in the same way, by atrophy so that a scar is left.

Treatment.—Irritative treatment in both classes of cases may do some good.

It can readily be seen that the chief difference between the two diseases lies in the following facts:

1. The lesions of lichen atrophicus are distinctly papular at the beginning, while the lesions of morphea are macular, or possibly maculopapular.
2. The lesions of lichen contain either spines or depressions, which is not true of the spots of morphea.
3. The lesions of lichen are more apt to become confluent than are the lesions of morphea.
4. There is a deep cellular infiltration in lichen that is lacking in morphea; in lichen the horny and granular layers are thickened while the remainder of the rete is atrophied, a point that is not true of morphea guttata in which the rete is usually intact.

It is evident that my case differs from either group in the following particulars: (1) in its clinical course, starting as a morphea-like condition and changing its lesions so as to simulate lichen planus atrophicus; (2) in its histology, there being a rarefaction instead of a sclerosis.

Nor does the case correspond to any of the atypical cases that have from time to time been reported as being related to one of two groups. It does somewhat resemble Johnston and Sherwell's case of "white-spot" disease in which the eruption consisted of white macules over the chest and shoulders, the lesions having the following histopathology: the rete consisted of four or five layers of cells showing hydropic degeneration, the stratum granulosum was practically absent, and the wavy line between the corium and rete had disappeared. The collagen was absent and the elastin was broken into short bits. There was an irregular lymphocytic infiltration. The few remaining blood-vessels were dilated and the endothelium projected into the lumen.

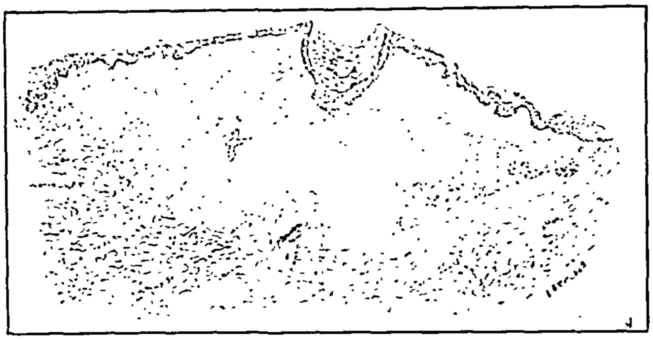

Fig. 2.—Low-power drawing through lesion.

In Riecke's case, which in some respects is similar to mine, the lesions were macular and lustrous, and each had a central depression. Later the lesions became confluent. Histologically the granular layer was thickened, but the rest of the rete was absent, with the exception of the basal layer, which showed marked hydropic degeneration. The connective tissue of the subpapillary portion of the corium was thickened and straightened, and contained no nuclei and no pigment. The elastic tissue was normal, the blood-vessels were increased in number and dilated, and the sweat-glands were unchanged. There was a moderate small-celled infiltration of the papillary and subpapillary layers of the corium. There was infiltration around the blood-vessels at the edge of the lesion. With the exception of the hypertrophy of the corium and the presence of an increase in the blood-vessels, the histology of Riecke's case is similar to that of mine.

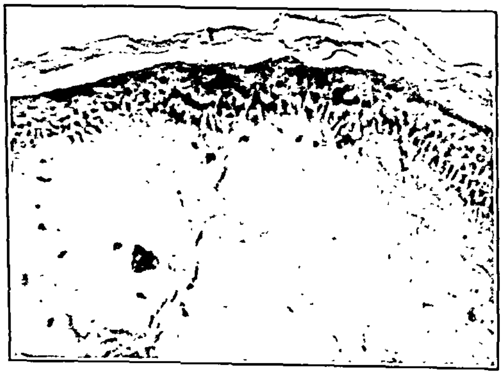

Fig. 3.—High-power photomicrograph to show epidermis and subpapillary portion of degenerated corium.

White[10] also has reported a case of "dermatolysis" which has certain histologic similarities to mine, although an entirely different clinical appearance, the lesions being nodular and cherry-colored, and later becoming dirty white. Histologically there was rare-

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10. White: Jour. Cutan. Dis., 1908, xxvi, 295.

faction of the lower portion of the corium. The nuclei were retained, and there were endarteritis, marked epidermal changes, perivascular, perifollicular and periglandular lymphocytic infiltration, basophilic collagen, collastin, with a diminution of elastin, and later a disappearance of both collagen and elastin.

Finally Dubreuilh[11] has reported a case in which there was first a perifollicular rarefaction followed by scleroderma; but again this does not correspond to my case.

CONCLUSIONS

1. It is generally conceded that there are two groups of cases that may give rise to "white spots," the morphea guttata group and the lichen planus atrophicus group.
2. Typical cases of either one of these groups differ both clinically and histologically from typical cases of the other group. The large majority of reported cases fall clearly into one or the other class, and there is no instance on record in which the lesions of one type have been converted into lesions of the other type.
3. Clinically the character of the eruption in my case changed from that of a morphea guttata type to that of a lichen planus atrophicus variety, and in this respect is unique.
4. Histologically my case showed a subpapillary disappearance of both collagen and elastin, a condition approached only by the case reported by Johnston and Sherwell.
5. Judging by some of the cases reported it is impossible to draw a hard and fast line between the two types of disease. Riecke's case does not clearly belong to either type, nor does mine, for it presents features suggesting a transitional stage between the two groups.

I am indebted to Dr. Gilchrist for much advice and help, both in the study of the sections and in the preparation of the paper.

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ABSTRACT OF DISCUSSION

Dr. A. Ravogli, Cincinnati: *I have had occasion to see some of these cases of white-spot disease, and I agree with the views of Dr. Hazen that some sclerotic condition of the tissues is always present. I recall the case of a woman in whom the white spots developed after an eruption of large papules, probably on a syphilitic basis. A photograph of this patient was published in connection with my article in the Beck* Festschrift. I have also seen these lesions after lichen planus atrophicus, especially around the neck. Unless we consider morphea as a separate type, I think that in all these cases we have a degeneration of the connective tissues, with a lack of pigment and a resulting light, superficial scar.

Dr. H. H. Hazen, Washington, D. C.: So far as my observation goes, the histopathologic changes that occurred in the case reported in my paper represented to me a totally unfamiliar form of degeneration of the skin. From the literature, morphea and white-spot disease are totally distinct affections, and yet this case had features of each.

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[11] Dubreuilh: Ann. de dermat. et syph., 1906, vii, 569.

No Rats, No Plague.—Squirrels to the westward of the Rocky Mountains and the marmot in Asia are subject to the plague in a more or less chronic form, but these animals, on account of their infrequent contact with man, are a menace, not so much in transmitting the disease to man as they are in being the source of a continued reintroduction of the disease among the neighboring rat population. It is, therefore, evident that the slogan "No rats, no plague" is very expressive of fact.—R. H. Creel, *Pub. Health Rep.*

IDIOPATHIC ATROPHY OF THE SKIN

WITH REPORT OF A CASE *

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Buchwald[1] in his work of 1883 was the first to describe an authentic case of idiopathic atrophy of the skin. Previously described cases were either secondary to some other disease or were scleroderma. Kaposi[2] in 1897 was the first to suggest that these cases were not primarily an atrophy but rather a dermatitis passing into atrophy. Herxheimer and Hartmann[3] in 1902 were the first, however, to use a title suggestive of this dermatitis. They published their observations on twelve cases under the title of "Acrodermatitis chronica atrophicans."

In a monograph published in 1910, Finger and Oppenheim,[4] after an exhaustive study of all cases found in the literature as well as those seen by themselves, suggested a classification and nomenclature which if followed should serve to clear away the confusion at present found in the literature on skin atrophies.

English literature is especially weak on this subject, owing perhaps to lack of cases for observation; but many cases have been so meagerly and indefinitely reported that one is unable to decide whether or not many of them should be accepted as authentic. Then too, many cases reported in the United States have been cases of atrophy occurring secondarily to some specific disease such as syphilis, and some cases probably were scleroderma.[5] Leaving these out, one may safely say that cases of idiopathic atrophy are rare here.

In their classification Finger and Oppenheim exclude all cases of so-called deuteropathic or secondary atrophy. This rules out congenital and senile atrophy, striae et maculae distensae, atrophies following lupus erythematosus, leprosy, scleroderma, morphea, xeroderma, etc. Included are those cases of atrophy which cannot be accounted for by any known disease and which present, in general, histologically and clinically, a dermatitis of gradual and insidious onset followed by atrophy. The skin is loose, wrinkled and has little or no elasticity. All cases which may be included under their definition whether of atrophies occurring in circumscribed areas, atrophies listed as suggested by Herxheimer (dermatitis chronica atrophicans) or as erythromelie, or so-called diffuse idiopathic atrophies, are different in degree and not in kind. Therefore, Finger and Oppenheim offer the following classification:

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* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Sections and Histologic Pathology by E. T. Bell, M.D., Department of Pathology, University of Minnesota, College of Medicine and Surgery.

[1] Buchwald: Ein Fall von idiopathischer, *diffuser Hautatrophie*, Arch. f. *Dermat.* u. *Syph.*, 1883.

[2] Kaposi: Verhandl. d. Wien. dermat. Gesellsch., 1897, iii; Arch. f. Dermat. u. Syph., 1897, v. xxxix.

[3] *Herxheimer and* Hartmann: Ueber Acrodermatitis chronica atrophicans, Arch. f. Dermat. u. Syph., 1902, lxi, 57.

[4] Finger, E., and Oppenheim, M.: Die *Hautatrophien*, 1910.

[5] Ravogli's case reported in 1903 *came* to necropsy and showed a gumma of the brain. Fordyce's case in 1904 was one of syphilis and the patient recovered under specific *treatment*. Finger (Die Hautatrophien und deren Verhältnis zu Sklerodermie, Wien. med. Wchnschr., 1910, No. 3, p. 165) asserts that the case reported by Taylor (Am. Arch. Dermat., 1876), was one of circumscribed scleroderma; that the case of C. S. *Smith* (Jour. Cutan. and G. U. Dis., 1888), was scleroderma; questions whether Duhring's case (Am. Jour. Med. Sc., 1892) was not one of morphea *alone* and combined with maculae atrophicae, *and* asserts that the case of Taylor (Jour. Cutan. and G. U. Dis., 1893) was one of *sklerodermie en plaque*, and that the case of Bronson (Jour. Cutan. and Ven. Dis., 1895), was a typical case *of lupus* erythematosus.

1. Dermatitis atrophicans diffusa or universalis, which applies to those cases involving large areas or the entire body.

2. Dermatitis atrophicans maculosa, applying to those cases in which only small circumscribed areas are involved.

The first class can be further divided clinically into acrodermatitis atrophicans (Herxheimer), which begins on and is usually confined to the extremities, and dermatitis atrophicans, which may appear on various parts of the body. The acrodermatitis atrophicans frequently has the further characteristic that the inflammatory stage shows not only a redness but even a marked swelling and infiltration.

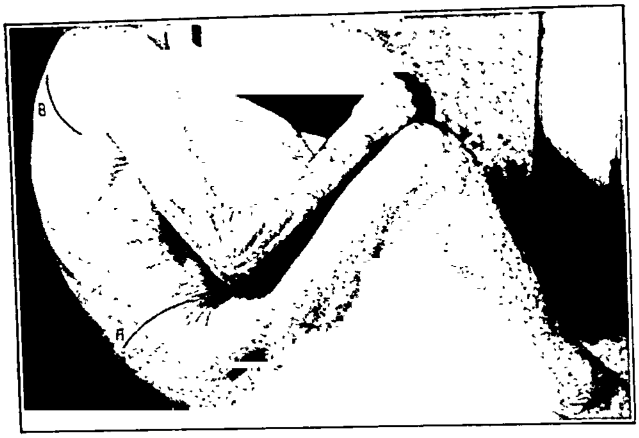

Fig. 1.—Extent of diseased process, up leg over crest of ilium to *A*; up arm onto shoulder to *B*. Note fine wrinkling of skin.

As an example of dermatitis atrophicans diffusa the following case is submitted:

REPORT OF CASE

History.—G. B., widower, aged 61, with no occupation at present, has been a carpenter and a blacksmith. The father died at the age of 55 and the mother at 50, from unknown causes. The patient has four brothers, of whom two died in childhood, and two are living and well, and three sisters, two of whom are dead and one is living and well. The patient was born in Austria and has had no illness except that he asserts that he had syphilis; but the history is questionable. He took practically no treatment, and now has no symptoms and a negative Wassermann reaction.

Present Illness.—This dates back about twenty-five years, starting with redness and swelling of the skin of the dorsum of the left foot and the back of the right hand; then the left hand was involved and last the right foot. The swelling present in the skin of the feet and legs is variable, being sometimes better and sometimes worse. The subjective symptoms have varied; occasionally the patient has a great deal of burning and itching, and again none at all. The extension of the condition over the extremities onto the trunk has been slow but gradually progressive.

Examination.—The patient is of average size and fairly well nourished; the hair and nails are unaffected. The reflexes are normal. The thyroid gland is normal in size; the inguinal lymph-nodes are palpable but not enlarged. Mucous membranes are negative. The urine is a light straw color, clear, specific gravity 1.018, and neither albumin nor sugar is present. The patient has complained at times of frequent urination of good-sized amounts, even getting up several times at night; but examination was negative and no cause for this condition could be found. Examination of internal organs is negative. The skin affection is roughly symmetrical and extends from the backs of the feet to Poupart's ligaments anteriorly and to the lumbar region posteriorly, from the wrists over the arms and onto the shoulders (Fig. 1). The junction of normal skin with the diseased part on the feet is sharply marked by an area from 1 to 1½ inches wide which extends along the sides of feet about an inch above the soles, and passes over the bases of the toes. This area is distinctly bluish-red and edematous, is soft and shows numerous ramifying dilated vessels; its margin is irregularly scalloped; below is normal skin; above, the skin is more of a clear pink, is hard, tense and edematous and has few wrinkles; in many places lamellar scales are seen. This swollen condition extends upward about half way to the knees anteriorly but not so high posteriorly (Fig. 2); it gradually fades or merges into more yellowish-pink skin with no edema, much decreased in thickness, of soft, silky appearance and with fine wrinkles, giving a crumpled cigarette-paper appearance. With the exception of an edematous plaque over the knees this atrophic condition extends to Poupart's ligament in front and to the lumbar region behind.

The skin of the genitals is not affected, which is characteristic. The scleroderma-like condition of the lower legs has been present in about one-third of the cases according to Finger and Oppenheim.[6] Through the atrophic skin the vessels show plainly as a network of whipcords. Where the tense edematous skin merges into the atrophic are many small areas with lamellar scales, on removal of which a depression is left that is white and almost scar-like (Fig. 2). Upward these appear to grow more numerous and smaller until gradually the diffuse atrophy appears, and passing downward these areas are larger, fewer and more separated until the skin is all tense and smooth except for a few scaly places around the ankles. The color can be pressed out of this edematous skin, but it does not pit; it can be folded some, not having the hardness of a true scleroderma, and it does not appear to be bound down to the underlying tissues. The skin is easily bruised and at times gives the patient considerable trouble with burning and itching.

On the posterior surface of the left thigh are three groups of rather round raised nodules. These groups are in a line running up and down the leg and separated about 2 inches It appears that there was originally a raised plaque for each group, and that the formation of furrows running in various directions produced the nodular appearance (Fig. 3). These nodules are raised sharply from the surrounding atrophic skin, are smooth and of a very hard fibrous consistency, and the color is darker and more brownish than the adjacent skin. Below these groups are two or three small, round, smooth white areas which look as though they might have followed the disappearance of other nodules. These lesions made their appearance, according to the patient, about a year ago, and are

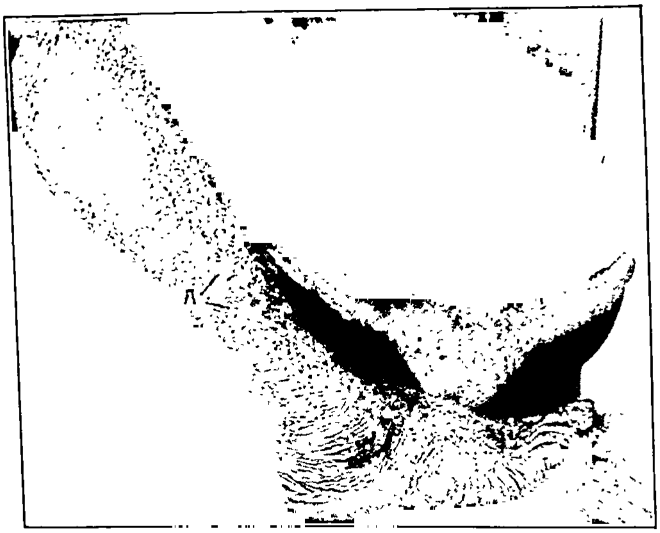

Fig. 2.—Tense edematous skin of lower leg merging into thin atrophic skin. At *A* are depressed scar-like areas where heavy lamellar scales were removed

painless. Similar lesions were first described by Oppenheim and occurred in one of his patients on the extensor surface of the elbow and knee.[7] Noble and Rona have also observed these fibroma-like lesions.

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[6] Finger and Oppenheim: Die Hautatrophien, 1910, p. 24.

The atrophy begins on the back of the right hand where the edge is not well marked, and passes up the arm onto the shoulder. On the left, the hand is not involved, the affection starting at the wrist where the color is bluish-red and continuing upward as on the right. The margins on the shoulders are marked by numbers of dilated vessels. On the upper extremities the skin is very thin, soft and wrinkled, and the vessels stand out very prominently. On the flexor surfaces of the forearms are seen at times fine bran-like scales.

Sensation in the thin skin seems about normal both to heat and cold and to touch, but there is some difficulty in distinguishing heat and cold in the infiltrated skin of the lower legs.

Histologic Examination.—For microscopic examination three small pieces of skin were removed, one from the back just above the buttock, one through one of the nodules on the thigh and one from the anterior surface of the lower part of the leg.

Sections from the first specimen show the malpighian layer of the epidermis much reduced in thickness (Fig. 5), but the stratum corneum somewhat increased. The papillae are entirely obliterated, making the line of contact between epidermis and corium almost a straight line. In the corium and subjacent subcutaneous tissue is a marked infiltration of mononuclear leukocytes. The high magnification shows many plasma cells. The elastic tissue is considerably reduced in quantity, but a number of fine fibers are still to be seen. In some portions of this section no elastic fibers are seen. No adipose tissue is present.

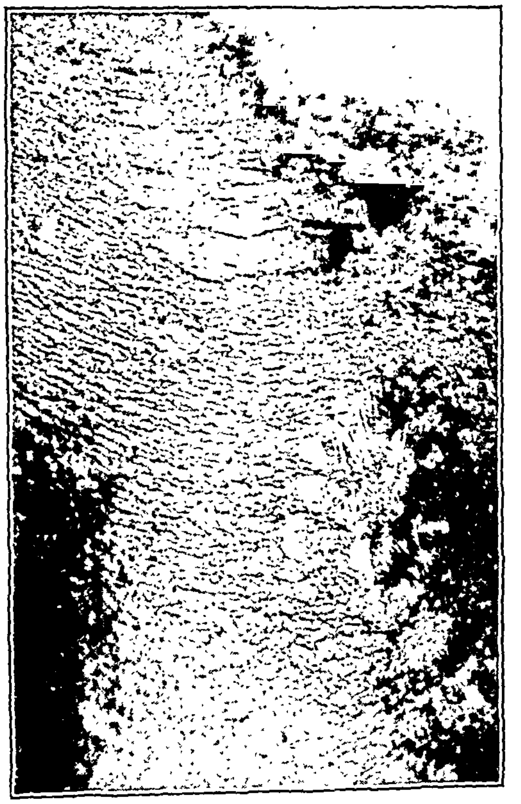

Fig. 3.—Nearly actual-size appearance of nodules on posterior aspect of left thigh. Fine crumpled tissue-paper appearance is well shown.

The skin alongside the fibrous nodule shows quite similar changes (Fig. 10), the cellular infiltration being much less and occurring only in small patches. The reduction of elastic fibers is more marked (Fig. 10); adipose tissue is absent. The nodule itself shows a structure corresponding to hard fibromas (which corresponds to the findings of Oppenheim), being fairly well-circumscribed and readily separated from the underlying tissues. It consists of fibrous tissue, rounded underneath but spreading out under the skin above. No elastic tissue is present.

The specimen from the lower leg shows the epidermis practically normal in appearance. There is a slight increase in lymphocytes in the connective tissue. Elastic tissue is almost entirely absent, no fibers staining with normal intensity, but a few faintly staining fibers are seen in some portions of the section.

ETIOLOGY

Many cases of idiopathic atrophy have been reported in which the etiology was quite plain. For instance, the case reported by Ravogli[8] came to necropsy and showed a gumma of the central nervous system, and in that reported by Fordyce[9] there were plain evidences of syphilis, and an improvement of all symptoms followed the use of antisyphilitics. Later writers, however, both here and abroad, are inclined now not to consider these cases as true cases of *idiopathic atrophy*. Sutton and Kanoky[10] state that evidence occasionally can be deduced to warrant the recognition of a new and distinct disease, and in consequence many cases that formerly were classed among the idiopathic atrophies can now definitely be placed in groups of their own. Finger, Oppenheim, Arndt and many others are in accord with this view; consequently syphilis and diseases of the nervous system need not enter into a discussion of the etiology.

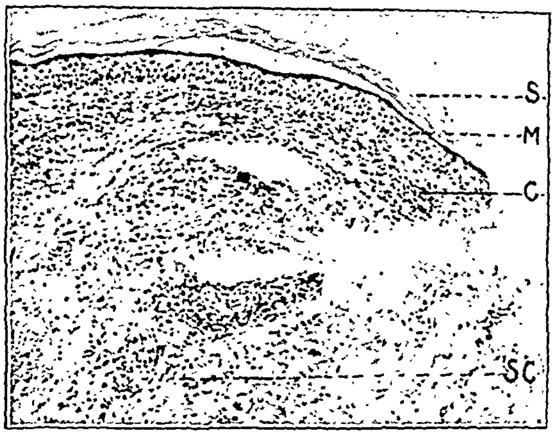

Fig. 5.—Section of skin from left upper gluteal region. Hematoxylin and eosin. Note the thinning of the malpighian layer, the lymphocytic infiltration of the corium and subjacent subcutaneous tissue, the absence of adipose tissue, the absence of papillae, and the moderate hyperkeratosis. *S*, stratum corneum; *M*, stratum malpighii, *C*, corium; *Sc*, subcutaneous tissue.

In considering the etiology a hypothesis must be advanced which will fit all the various classes of atrophy which differ in form and not in kind, and one which will constantly account for that which is histologically the typical finding, namely, the loss of elastic fibers. Other findings may vary in different cases and in different parts of the same case, but always we have the loss of elastic fibers.

Trauma was first considered as a causative factor, and Ehrmann attempted to prove the traumatic infectious nature of the malady, advancing as arguments the fact that most cases occurred in those whose work especially exposes them to trauma and infection, such as field-hands, fishermen and washerwomen; that the beginning place was frequently in the skin where bones come close to the surface; and further he found histologically in very early cases a perilymph angitis. This view undoubtedly fits many cases and explains the inflammatory stage, but it does not account for the atrophy with the loss of elastic tissue. Further, many cases are recorded as occurring in office workers, salespeople and others whose work does not expose them to trauma or to infection. This hypothesis could not possibly fit those cases of diffuse dermatitis atrophicans that occur on protected areas or those of macular dermatitis occurring on various locations.

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[7] Oppenheim, M.: [illegible] der 79 Vers. deutscher Naturforscher und Aerzte, [illegible] 1907; also die Hautatrophien, p. 26.

[8] Ravogli, A.: A Case of Progressive Idiopathic Atrophy of the Skin, The Journal A. M. A., Jan. 10, 1903, p. 73.

[9] Fordyce: Symmetrical Cutaneous Atrophy with the Coincidence of Syphilis of the Skin and Nervous System, Jour. Cutan. Dis., 1904, p. 155.

[10] Sutton, R. L., and Kanoky, J. P: A Comparative Study of Acrodermatitis Chronica Atrophicans and Diffuse Scleroderma, with Associated Morphea Atrophica, Jour. Cutan. Dis., 1909, xxvii, 559.

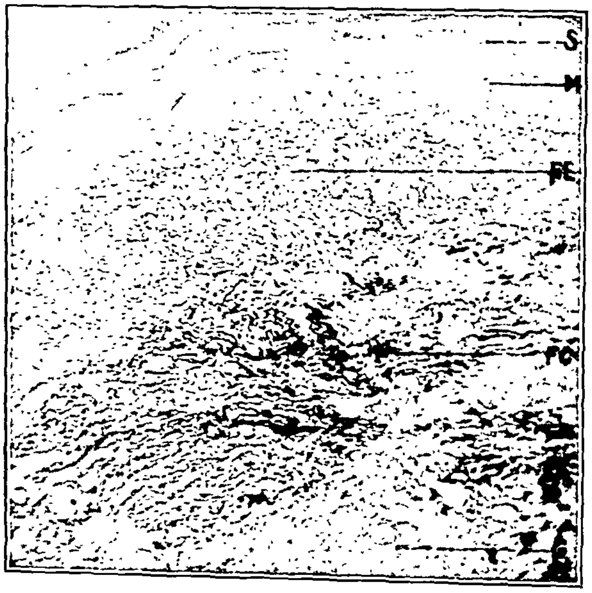

Fig. 7.—Section from the same specimen as the one shown in Figure 5. Weigert's elastic-tissue stain. There is a considerable reduction in the elastic tissue of the corium, although a large number of fine fibers are *still* to be seen. Elastic fibers, black; *S*, stratum corneum; *M*, stratum malpighii; *fe*, zone containing fine elastic fibers; *fc*, zone containing coarse elastic fibers; *g*, sweat-gland.

Trauma then can explain only the beginning of the cases in which there might be an injury and an accompanying infection, and a predisposition would be necessary to account for the atrophy of the elastic elements.

Many men have inclined toward atrophoneurosis. Neumann called it a trophoneurotic inflammatory process. Zinsser came to this conclusion, describing a case as a neuritic atrophy on account of the symmetrical distribution. Blaschko in his second case reported an *angioneurosis* with trophic disturbances and Heller found histologically atrophic nerves. In general, however, it does not appear that a direct connection with disturbances of the nervous system is present. Few cases show changes in the sensibilities either qualitative or quantitative. Reaction to cold, heat and pain are usually quite normal, as are also the reflexes. Muscles and bones show no atrophy as might be expected with a central trophic disturbance. Changes in the hair, nails and glands are rarely seen as would be expected.

Cases have been observed by Jadassohn, Heuss, Wechselmann and Bettman in tuberculous subjects, and this might be considered as a factor especially as a number of authors, including Orth, Federmann and Lubarsch, declare that the tubercle bacillus and its toxin has an elective action on the elastic tissue. Wechsberg found by animal experiment that the toxin was directly injurious to elastic elements. Whether this effect was mechanical or chemical remains unsettled, but it is probable that both have an effect. Meffert, studying experimentally the influence of the exudate and transudate, found histologically little difference, but asserted that the greatest decrease in elastic elements was caused not by exudative processes but by connective-tissue increase.

With dermatitis atrophicans complete loss of elastic fibers may be found without exudation or proliferation.

Oppenheim in studying histologically the organs and skin from cases of various forms of tuberculosis, could find no loss of elastic elements except when an exudate was present or when scars were found. Experimentally he studied the effect of tuberculin and other bacterial toxins on the aorta, skin and lungs, and could find no change in the elastic tissue. Experimental injections into animals also gave negative results. He therefore came to the conclusion that a specific action of the tubercle bacillus and its toxin on elastic tissue could not be proved; without a cellular infiltration no injury was observed. According to his results then, tuberculosis cannot be the cause of dermatitis atrophicans in any case in which there is loss of elastic fibers independently of infiltration.

An interesting experiment was tried in one of Finger's cases. Serum from a patient with dermatitis atrophicans maculosa was injected into the healthy skin of the thigh and also an injection of normal saline was made. The skin where the serum was injected became atrophic, but where the saline was injected no change took place. This would suggest that there might be some element in the serum which had the property of attacking the elastic fibers.

An etiologic factor which seems to play a rôle in the history of a large number of cases is the influence of temperature and weather, frosting, freezing, chilling, wetting and exposure to heat, as in cases of Columbini, Pospelow, Heller, Nikulin, Herxheimer and Hartmann and in some of Finger and Oppenheim's cases. My case was in a blacksmith for many years exposed to the heat of the forge. Nothing definite can be asserted for this, merely that it apparently bears some relation.

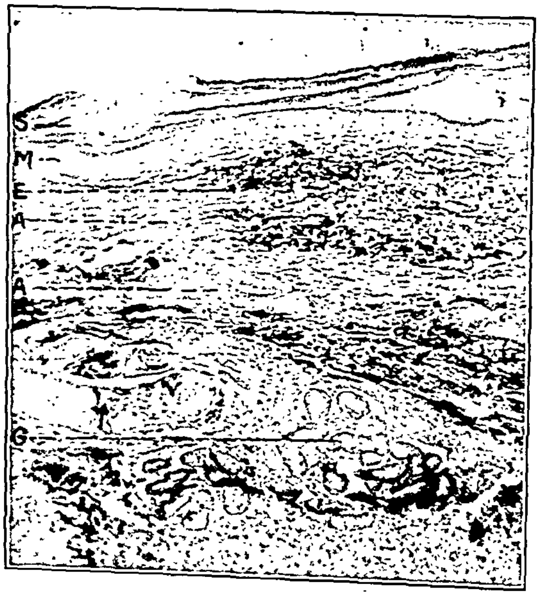

Fig. 10.—Section from the skin of back of thigh, taken near the nodule shown in Figures 8 and 9. Weigert's elastic-tissue stain. Elastic fibers back. There is a marked reduction of elastic tissue. Epidermis resembles that shown in Figure 5; *S*, stratum corneum (torn); *M*, stratum malpighii; *e*, area containing sweat-gland

The fact that some cases of Roentgen dermatitis have resulted in scleroderma-like changes and sometimes give a similar picture to idiopathic atrophy with erythema and venous stasis, with histologically, according to O.

Salomon and G. Noble, infiltration around the vessels, flattening of papillae and decrease of elastic tissue, might be regarded as significant.

One must also remember that xeroderma pigmentosa starts as an erythema solare and that in the atrophic stage it shows degeneration of elastic and connective tissues. These facts suggest that light may bear a certain relation to the atrophy.

Finger and Oppenheim after their studies and observations came to no definite conclusion as to the etiology, but offer three hypotheses which cover all classes of the idiopathic atrophies:

1. An internal causative agent acting on a predisposed skin, accounting for the macular and diffuse dermatitis atrophicans.
2. An external causative agent acting on a predisposed skin, accounting for the acrodermatitis atrophicans. Here mechanical, chemical and thermal injuries come into regard.
3. An external causative agent, through intensive and length of time of applications, can of itself cause atrophic conditions, as with the Roentgen-ray.

DIAGNOSIS

If a classification such as suggested by Finger and Oppenheim is accepted, much confusion is at once done away with and there remains but one disease with which dermatitis atrophicans may be confused—scleroderma.

Most authors agree that the differential diagnosis is usually easy; but I must confess after going over the literature that unless some one's work is taken as a standard one could put a given case in either class. For instance, Herxheimer in 1905 went into a detailed differentiation of scleroderma from acrodermatitis atrophicans, and according to him there could be confusion only in the atrophic stage; the early stage both histologically and clinically was easily differentiated. On the other hand, Arndt[11] in 1909 in reporting a case held that confusion can occur only in the early stage. Finger and Oppenheim also maintain that the diagnosis is harder in the initial stage than in the atrophic. In the infiltrated stage scleroderma shows a harder infiltration, the color is whiter than with dermatitis atrophicans and the skin is bound down to underlying tissues. Histologically scleroderma shows a marked increase in the collagenous fibers and not so much infiltration. Both may show loss of elastic fibers and atrophy of papillae. In the early stage it seems that there will be some cases which are atypical which will be hard to classify. Later in the condition two good points are suggested, one by Arndt, who believes that the most typical characteristic of the dermatitis atrophicans is its tendency to start on the extremities and progress toward the center of the body, while scleroderma shows no tendency to any regular localization, the other by Finger and Oppenheim who suggest that the best single diagnostic point is the so-called anetodermia, that is, the wrinkled or literally the sleeping skin. These authors[12] say that scleroderma always passes into a smooth scar-like atrophy and that any case which had been diagnosed scleroderma in the infiltrated stage which shows later wrinkled atrophy is not a scleroderma but an idiopathic atrophy.

PROGNOSIS

The prognosis in so far as *restitutio in integrum* is concerned is bad although two cases have been reported with recovery, one by F. J. Pick[13] and one by Finger and Oppenheim.[14]

THERAPY

Therapy is symptomatic and palliative. Improvement in the inflammatory stage may follow warm baths, galvanization or massage. My patient does not like heat either moist or dry, saying that it causes intolerable burning. He has been relieved of the itching and states that he feels more comfortable after the use of the faradic current and emollient salves; over the thin atrophic skin he has absolutely no symptoms and complains only of the legs and feet where infiltration is present. The dryness of the atrophic skin can be relieved by indifferent emollient salves. Internally tonics such as iron and arsenic are suggested to improve the general health.

601 Syndicate Building.

ABSTRACT OF DISCUSSION

Dr. Richard L. Sutton, Kansas City, Mo.: With the exception of the tumors on the thigh, the case here presented closely resembles one described by Bronson in 1892. Much of our earlier knowledge of this condition we owe to Pick of Prague, who first described the disorder as *érythromélie*, in 1888. I am of the opinion that in dealing with a case of this kind we are often too prone to try to make the case fit the disease instead of the disease the case. In 1905, Herxheimer and later, in 1908, Herxheimer and Hartmann described under the title of "acrodermatitis chronica atrophicans," a series of cases which presented, in varying degree, inflammatory manifestations followed by an atrophy of the affected skin resembling "crumpled cigarette-paper." While some of these cases proved acceptable under the title suggested, others did not. In 1910, I had an opportunity to study and report two cases, both occurring in the practice of my associate, Dr. J. P. Kanoky. One was clinically indistinguishable from a typical example of the so-called "acrodermatitis chronica atrophicans" of Herxheimer and Hartmann; the other was a mixed case of scleroderma and morphea atrophica. Histologically, the two cases were practically identical; consequently, I expressed the belief that while the gentleman from Frankfort may have been describing a new clinical and pathologic entity, the example of "acrodermatitis chronica atrophicans" studied by me was not a new disorder at all, but atrophic scleroderma. Later, my findings were verified by one of Unna's students, in Hamburg. In a third communication, Herxheimer, in collaboration with Schmidt, acknowledges that the two conditions are frequently indistinguishable.

Dr. Irvine places great stress on the decrease or absence of elastic tissue in the affected areas; in fact, he apparently agrees with Finger and Oppenheim in their assertion that this feature is pathognomonic of the disorder. Charles J. White, D. W. Montgomery and others have shown that the elastic fibers are diminished to a greater or lesser extent in a large number of cutaneous disorders; consequently, I fear that the conclusions of the men quoted by Dr. Irvine have rather an insecure foundation. I know of only two diseases in which the partial or complete absence of elastic tissue is probably a characteristic feature: epidermidolysis bullosa (the epidermolysis bullosa of Kobner) and angiokeratoma (Mibelli).

Dr. M. L. Heidingsfeld, Cincinnati: Dr. Irvine's patient immediately impressed me as being a well-defined case of erythromelia. The thin, wrinkled, parchment-like character of the affected areas, purplish-red discoloration, superficial telangiectases and symmetrical distribution over knees and elbows are absolutely typical. I think that the nodules over the legs are of secondary character, not relative to the affection. Erythromelia is a distinct entity, and a tendency to group this with such affections as scleroderma, acrodermatitis and lichen sclerosus is confusing and unnecessary. I regret to note the same tendency by some others to group such affections as psoriasis, lichen planus and parakeratosis variegata in a similar manner. All these affections are distinct entities and failure to recognize individual types lies with us and not with the affection.

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[11] Arndt, G.: Acrodermatitis chronica, atrophicans und Zirkumscripte Sklerodermie, Berlin. Med. Wchnschr., 1909, xxviii, 1303.

[12] Finger, E., and Oppenheim, M.: Die Hautatrophien, p. 125.

[13] Pick, F. J.: Ueber Erythromelie, Arch. f. Dermat. und Syph., Festschrift gew. M., Kaposi, 1900.

[14] Finger, E., and Oppenheim, M.: Die Hautatrophien, p. 43.

DR. WILLIAM A. PUSEY, Chicago: I had the opportunity of watching throughout its course a case which presented the terminal stages of practically the same affection which we have here. There were, when I first saw the case, areas of pseudosclerosis, with a distinct inflammatory element in the lesions. Later there was atrophy, such as is seen in this case; most interesting of all, I saw the patient a year later with gummata. I put this case and mine into the same class with those of Bronson and Fordyce. Until the appearance of the gummata on the legs, I had not suspected an association of the condition with lues. The process, to my mind, is an endarteritis of the superficial vessels, with subsequent atrophy, and it is due to various causes, of which lues is probably the most frequent.

I was glad to hear what Dr. Sutton had to say about the elastic fibers. Following Dr. Charles J. White's paper, in which he showed that destruction of the elastic tissue is one of the common changes in many processes in the skin, I have systematically examined it in all sorts of skin lesions, and I have found with White that it is a tissue element of great sensitiveness, the disappearance of which in skin lesions is so frequent that it can have little diagnostic significance.

DR. H. G. IRVINE, Minneapolis: In regard to the loss of elastic fibers, I did not wish to convey the idea that that was pathognomonic, but that it was the most constant finding, and in searching for the etiology of this condition, Oppenheim and Finger tried to learn the cause of this loss of the elastic tissue. That was the one constant finding; the other findings varied.

ADAPTATION OF THE CINEMATOGRAPH TO THE STUDY OF EMBRYOLOGY AND TISSUE-GROWTH *

JOHN ENGLISH McWHORTER, M.D.
AND
FREDERICK PRIME, JR., M.D.
NEW YORK

Our object in taking up this work has been twofold; first, to reproduce for the benefit of students, in their study of tissue-growth and the early development of the embryo, graphic pictures of the changes that these tissues undergo; and, second, to reproduce for study such movements as are not readily followed by the eye; such, for example, as the rapidly beating embryonic heart or the exceedingly slow movements incident to the growth of tissue and cell division. From the results thus far obtained, we feel warranted in assuming that the method about to be described of adapting the cinematograph to the microscope, for the purposes of photomicrography, is at least practical and capable of much further elaboration. The embryos as well as the tissues used in these experiments were those of the chick, the pictures being taken in different stages of development.

The preparation of the chick blastoderm for the purposes of photomicrography[1] may be described briefly as follows: Fresh fertile hen's eggs are incubated for from twenty-four to sixty hours at a temperature ranging from 37.5 to 40 C. (99.5 to 104 F.). At any stage between twenty-four and sixty hours incubation, the blastoderm may be removed from the egg and planted with comparative ease. Before and after that period, it is extremely difficult, if not impossible, to remove the embryo and prepare it for mounting without inflicting sufficient injury to cause death. Assuming that the incubation has been carried on for thirty-six hours, the first step after removal from the incubator is to cut away a sufficient amount of shell to expose the whole upper surface of the yolk. If the egg has developed normally, we see the embryo (Fig. 1) lying on the upper surface of the yolk, surrounded by a perfectly circumscribed zone, the extra-embryonic area. The embryo, with its extra-embryonic area, is freed from the yolk with a pair of fine scissors, and with a spatula is lifted from its position and immersed in a warm isotonic solution, either Locke's or Ringer's. The embryo is freed of its adherent vitelline membrane and yolk while thus immersed, floated on a thin glass cover-slip, removed from the solution and drained of any excess fluid. A

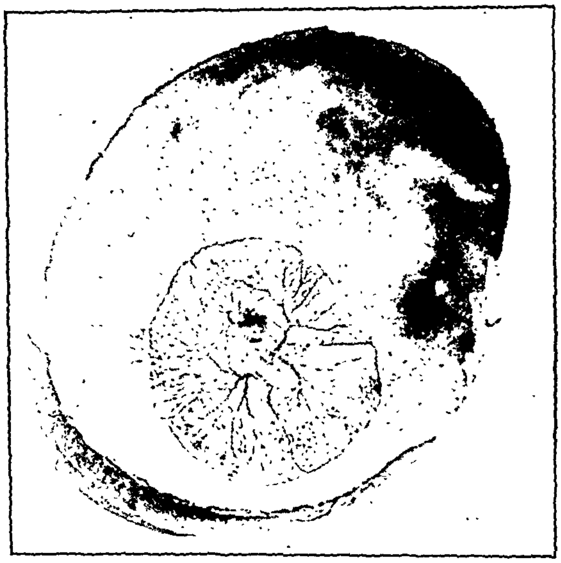

Fig. 1.—Egg, with part of shell removed, showing position of blastoderm on yolk.

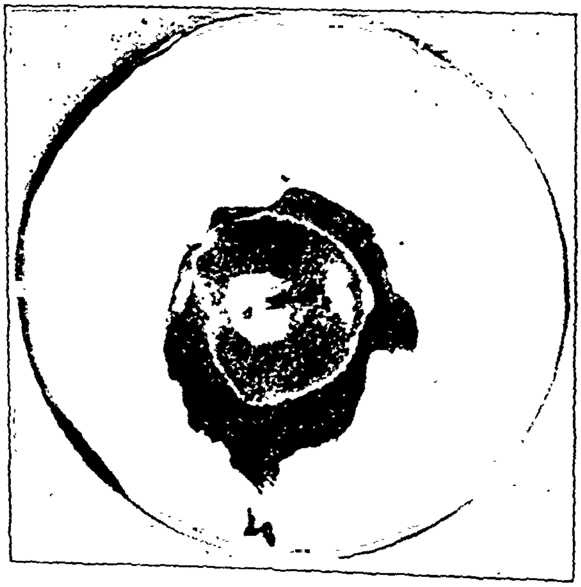

Fig. 2.—Glass cell showing blastoderm mounted and ready for microscopic study and photography.

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* From the Laboratory of [illegible] partment of Surgery, College of Physicians [illegible] University.

* Read before the New York [illegible], Feb. 6, 1913.

1. Anat. Rec., vi, No. 3

few drops of chicken plasma are now allowed to flow over the specimen, which, on coagulation, attaches it smoothly and firmly to the surface of the glass. Finally, the cover-slip is inverted over a large glass cell (Fig. 2), sealed with sterile petrolatum and paraffin, and kept in the incubator at a constant temperature. In other words, we have made of our embryo a hanging-drop preparation. The preparation of tissue-cultures for this type of photography is essentially the same as that for study.

APPARATUS

As may be seen from Figure 3 the apparatus can be divided into three parts: (1) the modified incubator; (2) the optical bench; (3) the cinematograph.

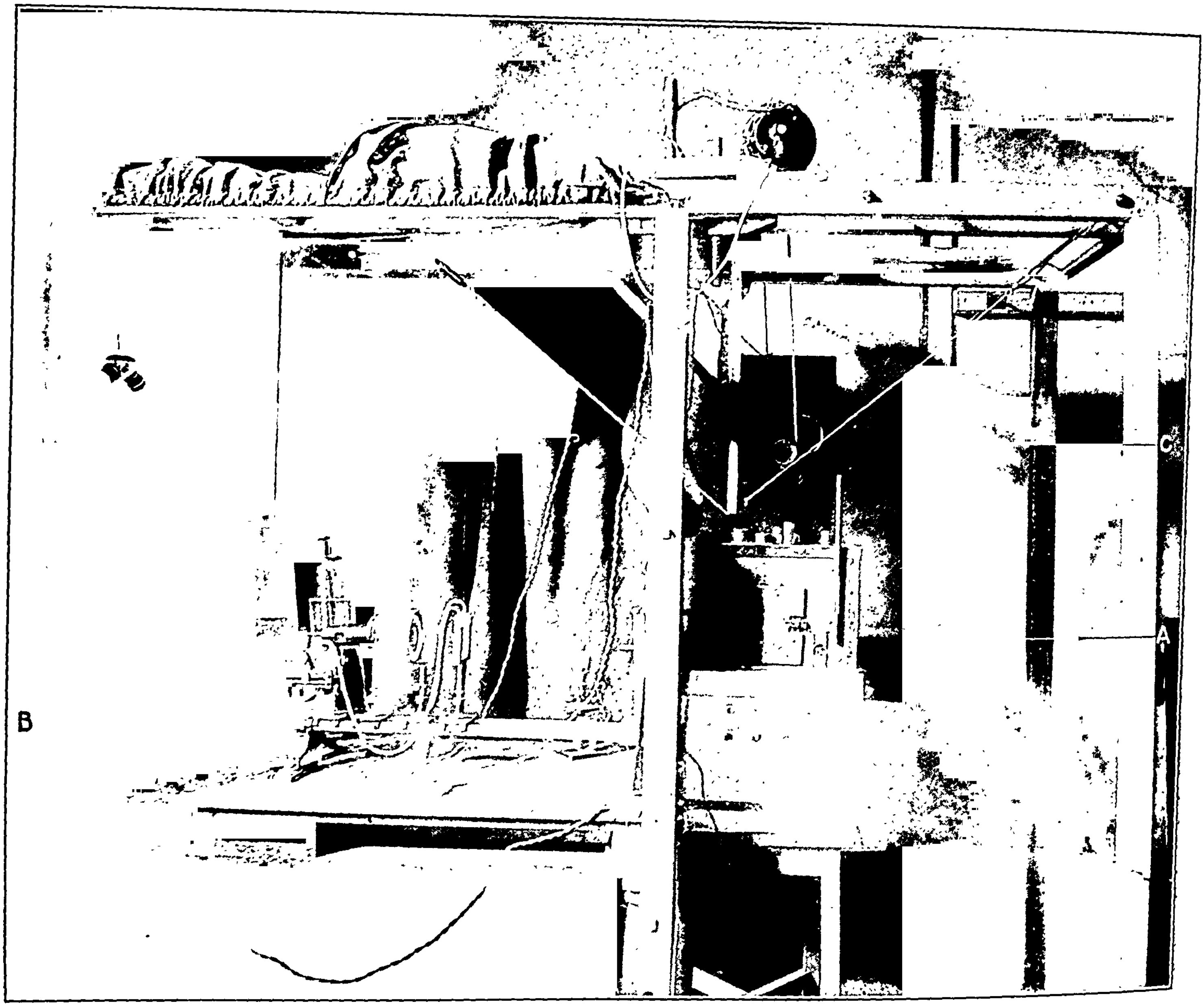


Fig. 3.—Apparatus: *(a)* The modified incubator; *(b)* optical bench; *(c)* cinematograph.

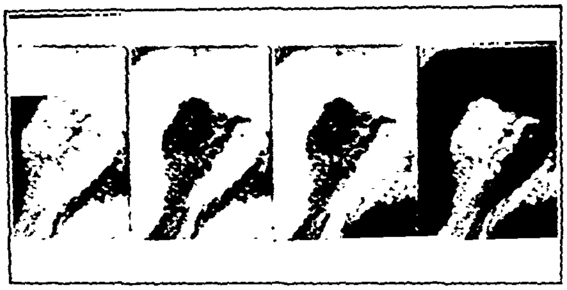
The modified incubator[1] is constructed to contain a microscope on the stage of which a specimen may be kept at an equitable temperature and yet available for study. This is accomplished by projecting the draw-tube of the microscope beyond the upper surface of the box, and by means of connecting rods attached to the various adjusting screws of the microscope and mechanical stage. The introduction of light to this microscope is effected by transmitting the rays from the optical bench through a small window in the box to a right-angle prism immediately below the substage condenser.

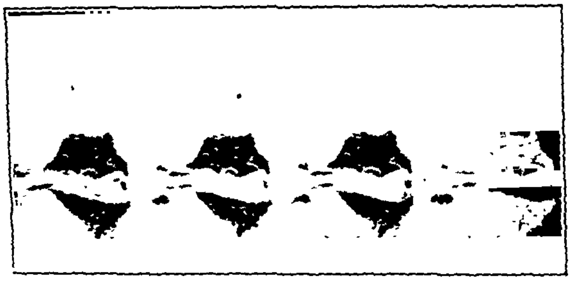
The optical bench is of the usual type; namely, an arc-light, iris diaphragm condenser and glass cell. The glass cell contains water in constant circulation. Its purpose is that of a filter and it removes to a large extent the heat-rays from the condensed beam of light. The automatic self-feed arc-light of from 15 to 20 amperes is the most suitable for this work, as it maintains a more constant and even illumination of the field.

In adapting the cinematograph to photomicrography the necessary changes are but two; first, a replacement of the lens by a metal tube; second, the substitution of a pulley and interlocking gear-wheels for the ordinary hand-cranking device. The gear-wheels, two in number, are of different sizes. The larger is screwed fast to the shafting that operates the mechanism within the camera, while the smaller, to which is riveted a small pulley, engages the larger wheel at one side. This reducing gear is so arranged that one revolution of the pulley gives one revolution of the rotary shutter within the camera, the equivalent of one picture.

The camera is held in place over the microscope by firmly clamping it to a slotted plate. This plate is suspended over the incubator and held in place by means of a heavy skeleton framework, to which it is attached above, and reinforced below with guy wires. The framework extends the whole length of the optical bench and incubator, and is, wherever possible, bolted to that part of the apparatus, thereby acquiring a very high degree of rigidity.

The cinematograph is operated by means of a small, slowly running motor, situated immediately above the camera and connected by belting. As the motor is governed by a rheostat. the number of pictures taken per second and the length of exposure as well are capable of being varied within very wide limits.





Figs. 4, 5 and 6.—Early stages in the development of the chick blastoderm; magnification from 2 to 5 diameters.

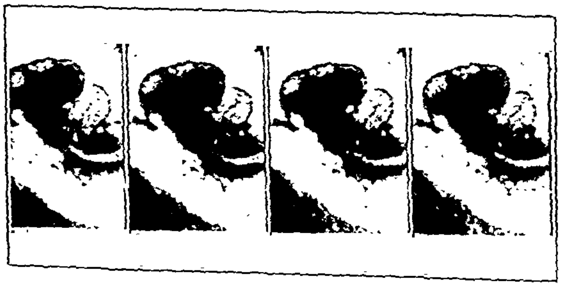


Fig. 7.—Heart in so-called loop stage; magnification from 5 to 10 diameters.

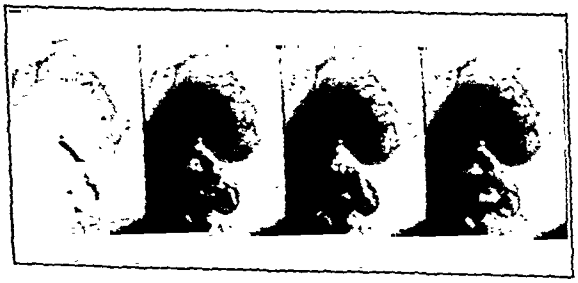
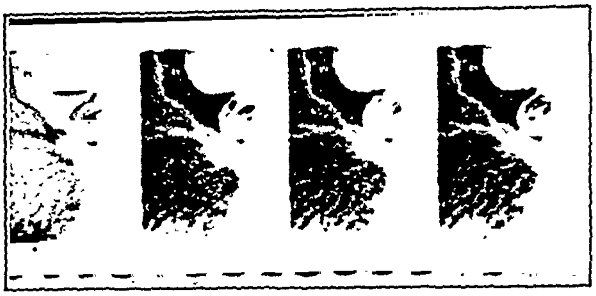
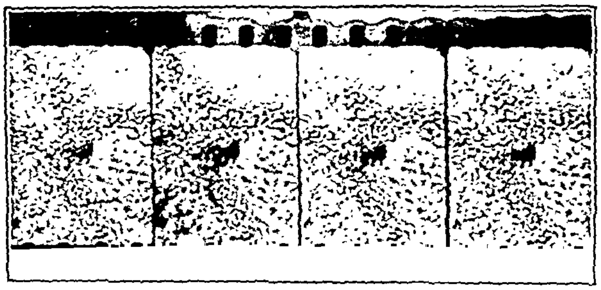


Fig. 8.—Heart in so-called irregular loop stage, magnification from 5 to 10 diameters.





Figs. 9, 10 and 11.—Primitive circulation in area pellucida; magnification from 10 to 100 diameters.

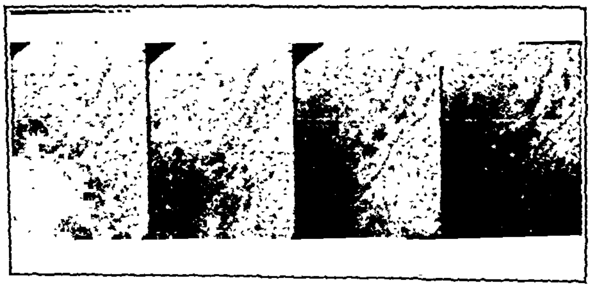


Fig. 12.—Primitive circulation more highly magnified; magnification 200 diameters.

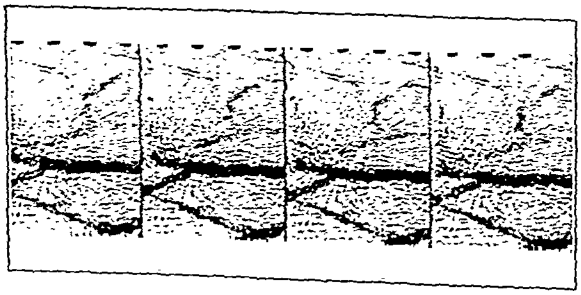


Fig. 13.—Circulation in frog's bladder, magnification 100 diameters.

METHOD OF USE

The method of photographing with this apparatus is the following: After the desired field in the specimen is found, the cinematograph is clamped to the slotted plate. The camera is then so centered that the eyepiece of the microscope is in a direct line with the center of the exposed film. All extraneous light is excluded by means of the tube, which, as already mentioned, is attached to the lens-board of the camera and when in position surrounds the draw-tube of the microscope. The rays from the arc-light having been carefully centered and cooled, the image to be photographed is brought to a sharp focus on the film. Having adjusted the diaphragm beneath the microscope to give the proper illumination of the field, and having determined the number of pictures per second necessary to record all the movements of the particular specimen under observation, the rheostat is next adjusted to the proper speed and the motor started.

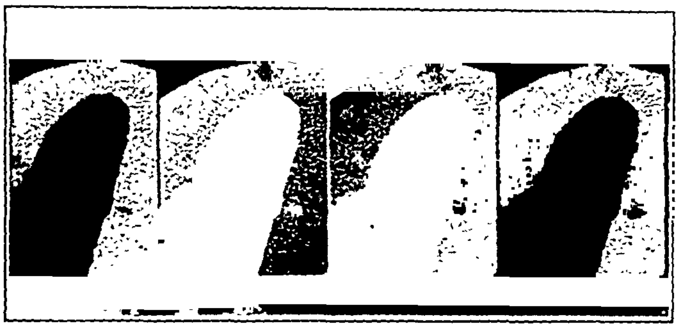
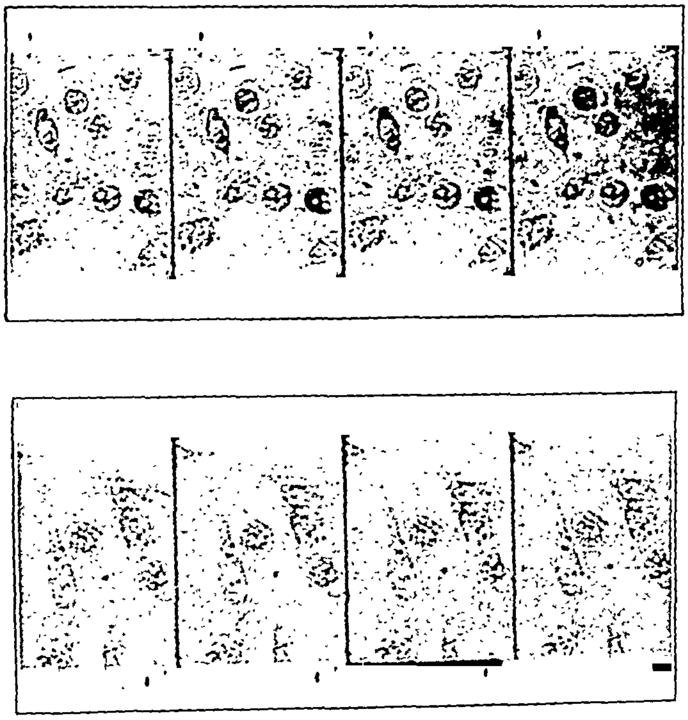


Fig. 14.—Outgrowth of connective-tissue cells in a tissue culture; magnification about 25 diameters.



Figs. 15 and 16.—Ameboid movement of mesenchymal cells; magnification 500 diameters.

The speed at which our pictures were taken has varied with the specimen; those of the beating embryonic heart, for example, were taken at the rate of about eight per second, while the movements of the cells may be clearly shown when taken at a rate not exceeding one or two per second. The movement of blood-cells in the circulation, however, is exceedingly rapid, and a speed of twenty-five per second is only sufficient to take those cells in the more slowly-moving blood-currents.

In order to show the possibility of this work the accompanying photographs have been reproduced from a few of our films.

The pictures are divided into three groups:

1. The chick embryo in various stages of its development.
2. The primitive circulation in the area pellucida as well as the circulation in the bladder of a frog.
3. The movements seen in the embryonal connective tissue-cell as well as those of the ameba.

The first three embryos in Series 1 (Figs. 4, 5 and 6) show the action of the embryonic heart in the very early stages of its development, before the onset of the primitive circulation. These embryos vary in age from twenty-six to thirty-six hours' incubation, and have a magnification of from two to five diameters.

In the fourth picture (Fig. 7), of an embryo of from forty to forty-four hours, there is to be seen the heart in the so-called loop stage, with a beginning primitive circulation.

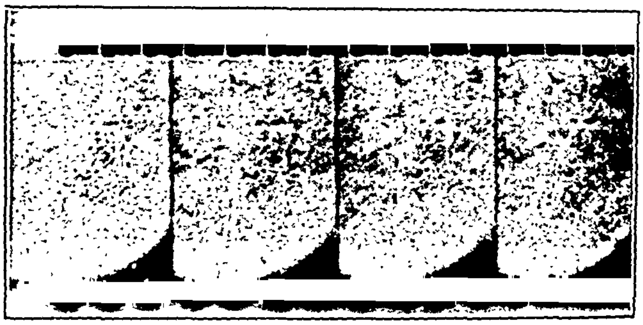


Fig. 17.—Streaming granules in a recently divided connective-tissue cell; magnification about 500 diameters.

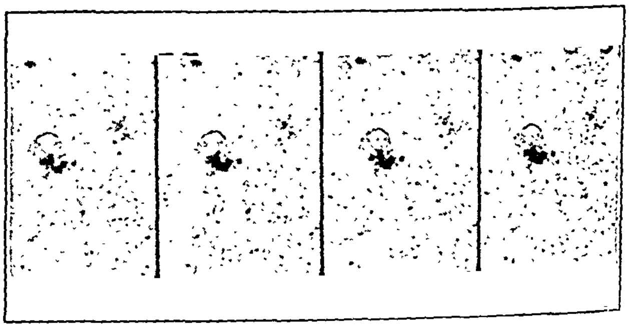


Fig. 18.—Ameba, magnification about 500 diameters.

The next picture (Fig. 8), at from forty-four to forty-eight hours, shows the heart in the irregular S-shaped stage. The heart at this stage of its development may be seen forcing the blood through its lumen, not as a continuous but as an interrupted stream, the interruptions being synchronous with the contractions of the heart.

The first of Series 2 (Fig. 9) shows a well-marked primitive circulation in the area pellucida as well as the passage of blood through the heart, followed by two moderately low-power pictures (Figs. 10 and 11) of a primitive circulation as found in the area pellucida of a chick embryo of from forty-eight to fifty hours.

The third (Fig. 12) is a somewhat higher-power picture of the primitive circulation taken from the same general region, showing the blood-stream with the individual blood-cells more clearly defined.

The final pictures (Fig. 13) of this group are of the circulation as seen in the bladder of a frog, and show at the same time the peristalic wave of the unstriped muscle.

In Series 3 is shown, first (Fig. 14) the outgrowth of connective-tissue cells in a culture made from the heart of an embryo chick. This is followed by mesenchymal cells, the activity of which is shown (Figs. 15 and 16) by the output of pseudopods, clearly seen in the first two sets of pictures. In the fourth group (Fig. 17), in addition to the pseudopod formation, there is a marked streaming of granules within the protoplasm. The final picture (Fig. 18) is that of an ameba, and is included in this group on account of the similarity of its movements to those of the mesenchymal cell.

250 West One Hundred and Seventh Street.—131 East Sixty-Sixth Street.

NEUROMA CUTIS (DOLOROSUM) [*]

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CINCINNATI

Cutaneous neuromas are either exceedingly rare or they have escaped proper recognition and enumeration in a field of specialized medicine preeminent for scrutinous detail and range of investigation. It is noteworthy that every structure of the skin save nerve-tissue has played an important and versatile rôle in the pathology and histogenesis of skin affections. The epidermis and its various layers, hair and its follicles, sweat-glands and ducts, oil-glands, lymph-vessels and blood-vessels, connective and elastic tissue, fat and unstriped muscle fiber have frequently been the seat of reduplication and structural activity, and each has often been accorded much significance and importance in the histogenesis of the host of cutaneous diseases. Nerve tissue, notwithstanding its important and versatile functions, its rich and wide distribution and its well-recognized changes in other localities, alone has escaped important notice, as evidenced by only two well-defined cases of cutaneous neuromas thus far recorded in the literature.

A neuroma cutis implies some form of new growth in the skin, multiple or single, variously sized, situated intimately in the skin, and containing new nerve elements. An important clinical feature in the cases thus far described is that they are the seat of very severe paroxysmal pain, of both spontaneous and secondary character. All subcutaneous nodules, whether painful or painless, springing from amputated nerves or what not, the so-called false neuroma of Virchow, and the subcutaneous nodules of Wood, together with the so-called "neurofibromas" of Recklinghausen, painless embryonic connective tissue new growths of the skin, accredited with springing from the medullated sheaths of subcutaneous nerves, are for obvious reasons not to be considered in an affection which deals with new nerve elements, in a new growth which has its origin, development and location in the true skin.

HISTORICAL

As already intimated, only two well-defined cases of neuroma cutis have thus far been reported in the literature.

Duhring, in 1873, reported a case of multiple neuromas, involving the left arm and shoulder, in a man aged 70. The affection began when the patient was 60 years of age, and the lesions increased steadily in numbers, until the affected areas were well covered. The lesions consisted of small, firm, split-pea-sized nodules, pinkish or bluish-red, and were firmly embedded in the skin. The overlying skin was somewhat scaly, but otherwise normal in appearance. For the first few years, the lesions did not cause any discomfort; soon after this they became the seat of very severe paroxysmal pain, of persistent excruciating and radiating character. These paroxysms were both spontaneous and induced, and were aggravated by unfavorable external influences. The color of the lesions was more livid during the seizures.

Kosinski, in 1874, reported a similar case, of sixteen years' duration in a male aged 30. The lesions, which numbered almost a hundred, were situated over the right thigh and buttock, and were extremely sensitive to touch and pressure. Both cases conformed in histologic structure to Virchow's description of amyelinic neuroma. The tumor, in Duhring's case, consisted of fibroconnective tissue and medullated and non-medullated nerve-fibers. Unstriped and striped muscular tissue was nowhere in evidence. Kosinski's case also showed chiefly fibroconnective tissue and non-medullated fibers. Resection of the brachial plexus in the one, and the small sciatic nerve in the other, resulted in prompt relief from pain and gradual subsidence of the lesions. The symptoms relapsed in six months in Duhring's case, and the pain and discomfort, up to the patient's death, six and one half years after the operation, became as severe as ever.

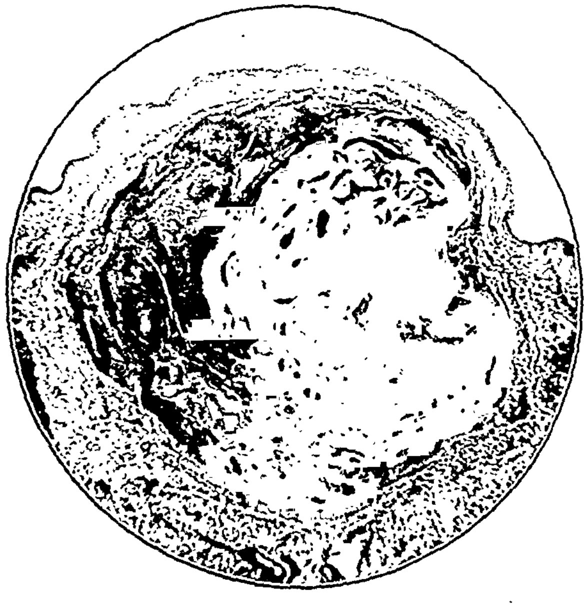

Fig. 1.—Neuroma cutis (low magnification). Irregularly round tumor mass of deeply stained *convoluted* tissue, containing numerous lymph-spaces and vascular spaces. Situated in the true skin just below the epidermis. Overlying papillae obliterated by distention atrophy. Entire absence of all glandular and special structures.

REPORT OF CASE

History.—J. F., saloon-keeper, aged 50 years, presented himself Jan. 31, 1913, with a small purplish-red nodule, somewhat larger than a split pea, situated on the anterior aspect, toward the inner side of the right thigh, 4 inches above the knee. It began twenty-five years before, following a slight injury, when the skin was caught between the staves of a sugar-barrel, which the patient lifted from a wagon. The lesion, which has undergone little material change in size for the past twenty or more years, caused the patient little discomfort, in the beginning. It soon became the seat of severe paroxysmal pain, of both spontaneous and induced character, of constant increasing intensity. It has become so sensitive in recent years, that slight pressure, notwithstanding that the patient is an unusually robust and strongly developed individual, measuring 6 feet in height and weighing over 200 pounds, almost induces syncope. Pressure and slight irritation from the trouser leg is almost unendurable. The pain is of a sharp, lancinating, excruciating character, and radiates up and down the thigh toward the genitocrural region and the knee. The paroxysms are often spontaneous, and are easily induced by even moderate indulgence in alcohol. The lesion bore such a striking clinical resemblance to that of a case of myomata cutis in my own experience, that this diagnosis was firmly entertained until a biopsy was completed.

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[*] Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

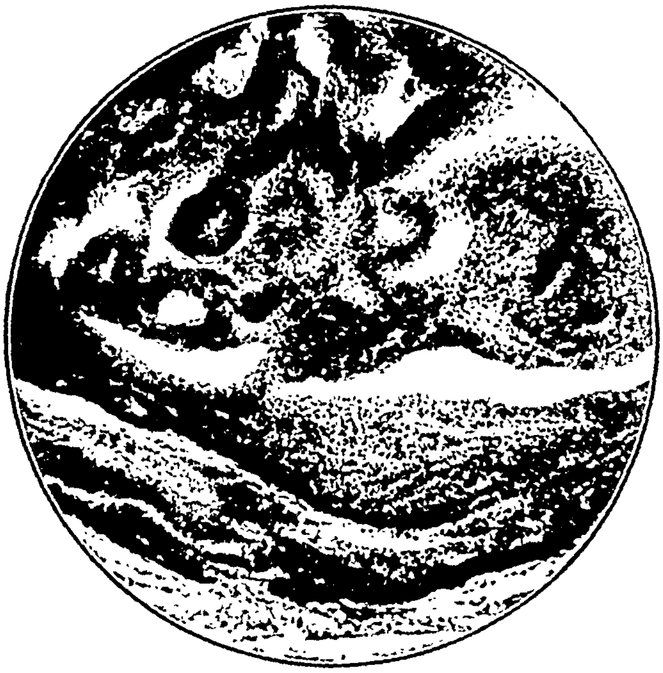

Fig. 2.—Moderate magnification. Border of growth showing convoluted structure and fibrous capsule. Cells arranged in irregular rows of several layers' thickness and in thickly proliferated masses.

The latter case, which I have already reported,[1] was that of J. R., a tailor aged 26 years, who presented himself with a small painful lesion above the left knee, which resulted from a fall from a bicycle nine years prior. The patient was thrown violently against a wagon, and sustained an ecchymosis with severe contusion, at the site of the present lesion. The central area took on a permanent bluish-red discoloration, and became the seat of severe excruciating pain of progressive character. The pain was of a lancinating, radiating character, often spontaneously paroxysmal, and easily induced by pressure or slight irritation. Pressure from the undergarments or trouser leg was at times intolerable. No diagnosis was entertained until the biopsy was completed. The microscope revealed a myoma cutis. Extirpation gave immediate and permanent relief.

Histologic Report.—The lesion, with a narrow border of normal tissue, was thoroughly excised to the subcutaneous fat, by means of an elliptical incision, and embedded in paraffin, sectioned serially and stained after the ordinary methods. A small portion was reserved for examination of nerve fibers. It is needless to state that I immediately sought the presence of unstriped muscular tissue. Not a vestige of involuntary muscular fiber was discernible in any of the sections.

Under low-power magnification, the growth was observed to consist of an irregularly round mass of deeply stained tissue, irregularly convoluted and containing numerous spaces which were easily recognized as vascular in character. The greater number of these were thick-walled veins; some were lymphatic spaces, with an extensive endothelial proliferation. A few small thick-walled arteries were interspersed. The mass rested in the true skin just below the epidermis, and extended well into the depths of the cutis, but was separated from the normal-appearing subcutaneous fat by a considerable mass of connective tissue. The pathologic area was surrounded on all sides by a narrow well-defined capsule of connective tissue. The overlying papillae were entirely obliterated, apparently from a distention atrophy, inasmuch as a small portion of the circumference of the tumor mass projected slightly above the level of the surrounding epidermis. Under stronger magnification, the tumor was observed to be made up almost entirely of small irregularly round or oval cells, with large, somewhat deeply stained nuclei arranged here and there in irregular rows with a thickness of several layers, but for the most part in thickly proliferated masses. The cells were indistinguishable and apparently identical with those which lined the large lymph-spaces and venous spaces. No other structures or specialized elements were discernible in the tumor mass except in the specially stained preparations which showed an abundant mesh-work of richly distributed nonmedullated nerve-fibers, which ramified through the tumor mass in an arborescent manner. The epidermis was normal. The rete malpighii was of normal thickness and contained its well-defined layer of columnar cells, and was covered with a normal stratum granulosum lucidum and corneum. Hair, hair follicles, and sweat or sebaceous glands or ducts were not demonstrable in the cutis or epidermis, either above or below, or in proximity to the growth. The cells in the pathologic area did not preserve the even, diffuse distribution of an ordinary lymphoma, but conformed more to that of a lymphangioma or rather an endothelioma. The pathologic diagnosis was that of a neuro-endothelioma of amyelinic type and conformed very closely in its histologic character to the amyelinic neuroma described by Virchow.

GENERAL DEDUCTIONS

Cutaneous neuromas bear a close and deceptive clinical resemblance to myoma cutis, and the microscope must be relied on to effect the differentiation. My own case of neuroma preserved the greatest possible resemblance in point of clinical appearance, chronicity, nature and character of onset, development and symptomatology, to my previously reported case of myoma cutis. When the microscope failed to reveal the presence of involuntary muscular fibers, I was momentarily bewildered.

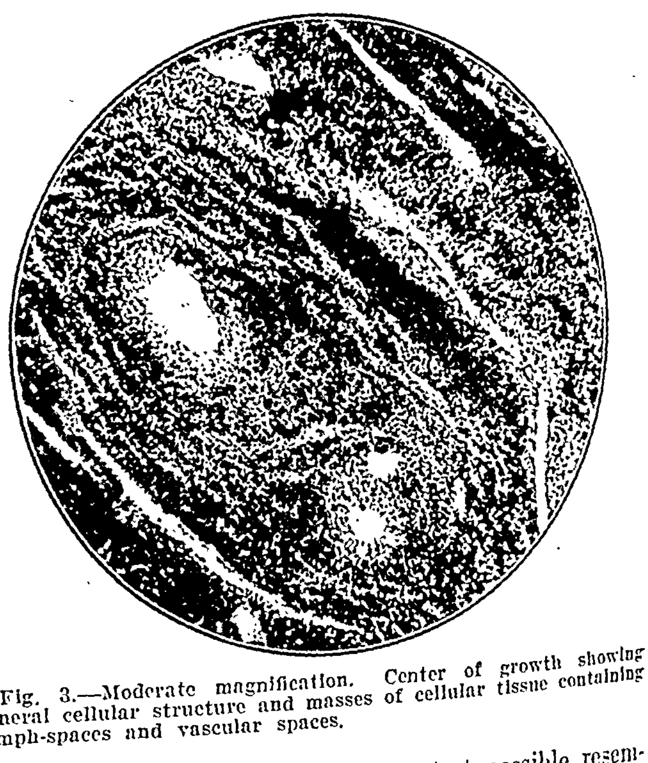

Fig. 3.—Moderate magnification. Center of growth showing general cellular structure and masses of cellular tissue containing lymph-spaces and vascular spaces.

Fourteen cases of well-defined myoma cutis have thus far been recorded in the literature. Pain, of a severe lancinating character, spontaneously paroxysmal or easily induced, was associated in nine of the cases, and was absent in the remaining five. In some of the cases nerve abnormalities were noted, but in the vast majority no such observations were made, possibly because of technical omissions, in this special direction. Verneuil, for example, reports a dissecting-room case of myomata cutis in which nerve-fibers were present in such abundance that the diagnosis of neuroma could be entertained almost as well as that of myoma.

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[1] Heidingsfeld, M. L.: Myomata Cutis, The Journal A. M. A., Feb. 16, 1907, p. 562.

The diagnosis of myoma must be considered well taken if there has been a preponderating proliferation of well-defined involuntary muscular fiber; but this in and of itself fails to explain why slightly less than two-thirds of the cases present clinical characteristics in the form of severe paroxysmal pain, spontaneous or easily induced in character, whereas slightly more than a third of the cases are free from all special symptoms. It also fails to explain why some of the cases show an abnormal proliferation of nerve elements, and others no special change. The explanation that the pain is due to mechanical pressure of the growth on the surrounding nerve endings, scarcely suffices: otherwise all growths in the cutis would give rise to similar symptoms.

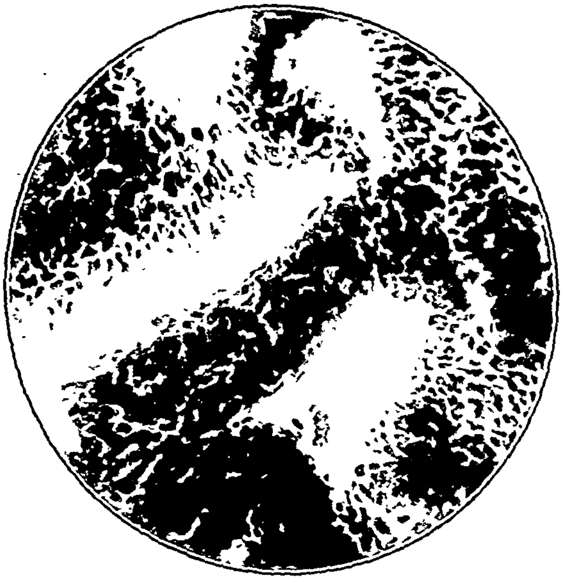

Fig. 4.—General structure of growth under strong magnification. Small, irregularly round, deeply stained cells with large nuclei surrounding lymph-spaces and vascular spaces.

The pathologic proliferation of involuntary muscular fiber in the true skin is unquestionably noteworthy. I am of the opinion, however, that it is not an incident of very exceptional character. I have observed, for instance, marked proliferation of involuntary arrectores pilorum in some of the chronic dermatoses which are attended with persistent creepy and chilly sensations, notably pityriasis rubra pilaris. It is evident that this tissue can readily undergo a very material compensatory hypertrophy under abnormal stimulation, and its hypertrophic presence can readily be considered an effect rather than a cause. If this is true, no cutaneous abnormality would, in all probability, be more conducive to involuntary muscular fiber proliferation than a neuroma, with its attendant intolerant paroxysmal attacks. It is therefore obvious that some of the cases of myomas can, on clinical as well as on pathologic grounds, be considered to be neuromas rather than myomas. Unassociated myoma in my case can probably be attributed to apparent primary absence of all specialized structures, hair, follicles, glands, etc., as well as involuntary muscular fiber. At all events, all excessively, persistently painful lesions of the skin, in which the pain is of a severe, lancinating, spontaneously paroxysmal or easily induced character, warrant a careful technical examination of nerve fibers, and their abnormal presence justifies, in my opinion, irrespective of other findings, the diagnosis of neuroma cutis. The cases doubtless justify further differentiation, in the form of neuromyoma, neuro-endothelioma or neurolymphangioma, in conformity to the preponderating hypertrophy of the associated pathologic tissue.

CONCLUSIONS

Neuroma cutis is a well-defined clinical and pathologic entity. Its relative infrequency is more illusive than real. Its failure to receive proper recognition and enumeration is doubtless due in large measure to technical omissions. There are good grounds for believing that well-defined cases of neuroma have been accorded classification with other affections of the skin. Every chronic lesion of the skin attended with severe paroxysmal pain, of spontaneous or easily induced type, should be carefully examined for nerve abnormalities and accorded recognition in conformity to the clinical and histologic findings, irrespective of other pathologic changes.

19 West Seventh Street.

THE NEWER CUTANEOUS MYCOSES [*]

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SAN FRANCISCO

The investigation of various fungi, called by French writers *les champignons parasites*, offers one of the most inviting fields of medical research. The rapid increase in the number of cutaneous lesions traced to fungous origin inevitably brings the dermatologist face to face with problems in mycology which clinicians have been accustomed to relegate to the botanist. While the science of bacteriology has developed rapidly as a branch belonging particularly to medicine, the study of true fungi has been generally considered as something of merely academic interest. Medical mycology has been lagging behind. Our schools give it scant notice and American literature deals with it only to the extent of detached case reports. So sparse, in fact, is our literature on the general subject of pathogenic fungi that I could not find a single complete description of the common thrush organism in more than a score of American text-books consulted for the purpose. It seems certain that if our knowledge of mycology is to progress as it deserves it must be through the same cooperation of clinician and laboratory worker that has made possible the notable advance in bacteriology.

Of course all bacteria are fungi though of a special order, differing from the so-called true fungi in their direct reproduction by fission; but there has always been a tendency to separate the true fungous diseases from those caused by bacteria. Recently, however, such striking resemblances have been shown as to make the distinction seem wholly artificial. Many diseases due to fungi closely simulate bacterial diseases. The mode of action of pathogenic fungi is identical with that of bacteria, namely, by toxins, which has been shown by numerous observers. Serologic reactions have been found in fungous diseases quite comparable to those of bacterial infections. Likewise facts relating to immunity in mycoses have been shown to be exactly analogous to those of bacterial disease. These are reasons for bringing the two classes of organisms into closer union rather than considering them as opposites.

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[*] Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

The purpose of this paper is to emphasize the need for a wider knowledge of the pathogenic fungi as well as to recapitulate some of the available facts concerning the more recently described mycoses with which dermatologists may have to deal.

For even a brief survey of these conditions some preliminary consideration must be given the general classification of fungi in order to appreciate their relationship to one another. This question may be approached from several distinct points of view. The purely botanic classification would seem most precise in that it arranges various units into groups or families based on genealogic affinities. The classification on a simple morphologic basis, as the grouping of bacteria under such titles as bacilli, cocci, etc., will not suffice. The division of fungi into groups according to the pathologic processes they cause may be of practical value to the clinician. Bodin,[1] first arranging fungi as far as possible in groups according to their relationship, would thereafter adopt an admittedly artificial classification according as the lesions they cause in man are strictly cutaneous or capable of becoming generalized within the body.

Up to a certain point our classification must rest on a sheer botanic basis. The exact place of fungi in the plant world is seen by constructing a table beginning with the thallophyta, which differ from the other fundamental forms of plant life in that they show no differentiation into distinct parts as root, stem and leaf.

The group of thallophyta presents three subgroups:

1. Schizophyta, or fission plants.
    (*a*) Schizophycae: chlorophyll present.
    (*b*) Schizomycetes or bacteria: chlorophyll absent.
2. Algae.
3. Fungi.

Fungi are divided into two subgroups:

1. Myxomycetes: devoid of sheath and parasitic only to vegetable life.
2. Eumycetes: having a cellulose sheath and parasitic to man and animal.

Eumycetes, then, are the fungi with which we are concerned in this discussion. They are divided according to their modes of reproduction into four groups:

1. Oomycetes: egg-producers.
2. Ascomycetes: fruiting by asci.
3. Basidiomycetes: forming basidia.
4. *Fungi imperfecti:* mode of reproduction yet unknown.

Fungi imperfecti constitute a much-discussed group in mycology. One view is that they are fungi which were formerly superior or perfect but which have become inferior or imperfect. In other words, they have lost their superior form of reproduction, the ascus, and have retained their lower form, the conidium. Another conception is that they are primitive forms which are offshoots of other fungi of more complicated forms.

It will be noted that this classification makes no mention of the terms "yeasts" and "molds." In a general sense fungi which reproduce by budding are called yeasts, while those which fructify by spore-formation are termed molds.

The true yeasts are fungi that reproduce vegetatively by budding and that form ascospores under certain conditions. Some fungi that morphologically are yeasts and reproduce by budding do not form ascospores. Some also resembling yeasts morphologically produce disease, and their exact botanic position is uncertain. They are termed "pseudoyeasts," "torulae" or "mycodermae," and are grouped among the *fungi imperfecti.*

While the yeasts are unicellular the molds are multicellular. It is difficult to define molds. The systematic botanist does not recognize any such group. Considered collectively, however, they present certain superficial resemblances. They all possess a plant body made up of hyphae. They do not form a specific class of fungi, for they include members of each of the four chief groups of fungi. The term "hyphomycetes" is often used to cover this group.

Under the title of newer cutaneous mycoses may be included those skin diseases the specific fungus of which is of relatively recent discovery. Some of these, as is well known, are not limited to the skin but become more or less generalized. It is not within the scope of this paper to discuss all of these dermatomycoses exhaustively. The intention is rather to mention certain aspects of each with the view of emphasizing the importance of their recognition.

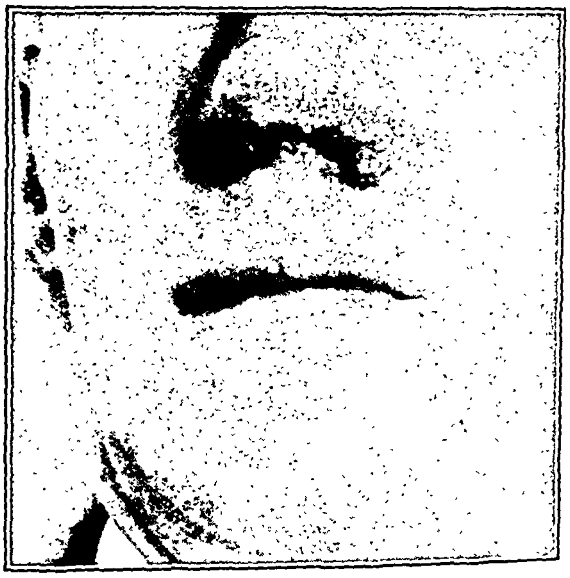

Fig. 1.—Granuloma coccidioides.

The diseases selected for special mention are trichomycosis of Castellani, blastomycetic dermatitis, granuloma coccidioides, sporotrichosis, oidiomycosis and hemisporosis. New light recently shed on the subject of eczema marginatum and the group including actinomycosis, mycetoma, etc., brings these affections also within the range of this discussion.

Trichomycosis is the name applied by Castellani to an affection of the hair of the axilla which he has often observed in the hot, damp districts of Ceylon. The disease consists of soft formations, yellow, black or red, and easily removed by scraping with a triangular needle or similar instrument. The yellow variety is due to a bacillus-like fungus, probably a streptothrix or one of the microsporoides. The pigmentation in the black and red varieties is caused by coccus-like organisms which grow in symbiosis with the streptothrix-like fungus.

What was described in 1860 by Hebra as eczema marginatum was subsequently considered of parasitic nature and was called inguinal trichophytosis until Sabouraud in 1907 described the parasite as an epidermophyton and showed it to be entirely distinct from the trichophytons. The clinical aspects are well known. The sharp outline with somewhat elevated border and the tendency to central resolution with peripheral extension give it the trichophytoid appearance which accounts for the earlier mistake concerning its cause.

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[1] Bodin: Les champignons parasites de l'homme.

Aside from the common type, Sabouraud describes two others which are rare. The non-circumscribed erythematous type is red throughout, though in its later stages showing a tendency to heal in the center. The eczematoid type, however, observed in only one case of a considerable epidemic, showed a marked inflammatory aspect and an elevation of the entire lesion. This type was regarded as corresponding to the compound of eczema and trichophytosis described by English authors.

In 1910 Sabouraud[2] recognized in certain so-called eczemas of the fingers and toes other lesions due to the same organism. What would now appear to be the appropriate name for the condition is epidermophytosis with the proper adjective to denote the region involved if such qualification is deemed necessary.

The discovery of a specific organism capable of evoking a reaction which passes for an eczema is an event of importance. The question of micro-organisms in eczema, whether primary or secondary, whether fungous or bacterial, is probably by no means definitely settled.

The differential diagnosis of interdigital epidermophytosis and true eczema is made by the exclusive localization in the interdigital spaces, the callous inferior border of the lesion, the fine vesiculation of the adjacent skin, the absence of eczematous patches elsewhere, and the presence or antecedent history of inguinal epidermophytosis.

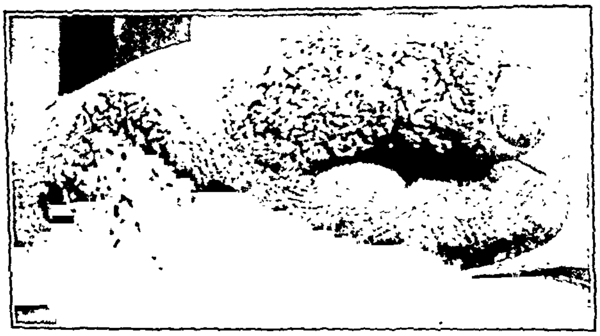

Fig. 2.—Blastomycetic dermatitis (courtesy of Dr. E. C. Dickson).

Cultures of the epidermophyton are made with some difficulty. The cold culture on glucose, gelatin-peptone gives a yellow growth in three weeks.

In connection with the treatment of the affection with an ointment containing 1 per cent. of chrysarobin, Sabouraud emphasizes two pertinent facts relative to the use of this drug. The first is that chrysarobin is soluble in neither petrolatum nor lanolin, though it does dissolve in lard. He therefore prescribes it in lard with directions that it be prepared hot and stirred until cool. The other point is to avoid soap in removing chrysarobin, as the action of an alkali is to increase its penetration. The removal of chrysarobin ointment, therefore, should be effected by the use of oil or lard.

The subject of sporotrichosis brings up the question of identity among several organisms. The importance of the disease makes it worth our while to review briefly certain points in its history.

Many saprophytic forms of sporotrichium have been known for a long time. The discovery of pathogenic forms is of comparatively recent date. Sporotrichosis was first described by Schenck,[3] and Hektoen and Perkins,[4] in 1898 and 1900, respectively. The two cases were considered identical and the organism was named sporothrix of Schenck. Matruchot and Ramond, without knowing of these cases, described a variety cultivated in Paris by de Beurmann and Ramond, and named it *Sporotrichium beurmanni*.

De Beurmann and Gougerot compared these two parasites in 1906 on the basis of the text of American descriptions and the accompanying illustrations, as well as specimens which Hektoen had sent them as typical of the sporothrix of Schenck. Between these two organisms they found differences in development, cultural appearances and biologic characters, differences sufficiently marked to justify considering them as distinct. In the years 1909 and 1910 quite a series of new cases was reported in the United States by various authors. In all accounts the parasite was called the sporothrix of Schenck.

Shortly before the publication of their book on Sporotrichosis in 1912, de Beurmann and Gougerot[5] had the opportunity of comparing cultures of recent American cases taken to them by Davis with those of the *Sporotrichium beurmanni*. As a result of this comparison they concluded that the Davis cultures are, if not identical with those of de Beurmann, at least the connecting links between the *Sporothrix schenckii* first sent to them from the early American cases and the *Sporotrichium beurmanni*.

They consider that in the circumstances three interpretations are possible:

1. The first American specimens of the *Sporothrix schenckii* represent the true type of this organism, in which case the *S. schenckii* and *S. beurmanni* are closely related but different organisms.
2. The *S. schenckii* and the *S. beurmanni* are derived from a common stock but differ to-day though related by numerous intermediaries as the specimens of Hyde and Davis.[6]
3. The original specimens of *S. schenckii* sent to de Beurmann represent a fixed and irreducible pleomorphism of the *S. schenckii*, differing from the original Schenck and the original Hektoen cultures. The *S. schenckii* is not to be judged by the first specimens. The true *S. schenckii* is represented by the Hyde-Davis type. In this case, since the de Beurmann form is practically like the Hyde-Davis form, the *S. schenckii* and the *S. beurmanni* are identical.

The practical importance of this question lies in the fact that cultural appearances play an important part in the recognition of sporotrichosis. A point much to be emphasized is the necessity of using a standard medium. On the so-called *milieu d'épreuve* of Sabouraud the sporothrix gives a definite appearance. One who gets his impressions of cultural appearances from de Beurmann and Gougerot's description would not recognize the cultures of early American cases as growths of the same organism, the one being nearly black while the other is nearly white.

Microscopically the differences are not marked between the two forms, though the short oblong forms seen in specimens made directly from secretions are to be considered as short mycelial forms rather than spores as some have described them.

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[2] Sabouraud: Les Teignes: Sur l'existence fréquente d'un soi-disant eczéma des doigts et des orteils, du à l'epidermophyton inguinale, Ann. de dermat. et de syph., June, 1910.

[3] Schenck: Refractory Subcutaneous Abscesses Caused by a Fungus Possibly Related to the Sporotrichia, Bull. Johns Hopkins Hosp., 1898, p. 281.

[4] Hektoen and Perkins: Refractory Subcutaneous Abscess Caused by Sporothrix schenckii, Jour. Exper. Med., 1900, p. 77.

[5] De Beurmann and Gougerot: Les nouvelles mycoses; les sporotrichoses.

[6] Hyde and Davis: Sporotrichosis in Man, Jour. Cutan. Dis., July, 1910.

Other pathogenic forms of sporotrichium have been reported, notably *Sporotrichium dori,* 1906; *S. gougeroti,* 1907; *S. asteroides* (Splendore), 1908; *S. indicum* (Castellani), 1908, and *S. jeanselmi,* 1910.

All of these are apparently in very close relation with the *S. schenckii* except the *S. dori,* which seems to show marked differences both clinically and in culture. The sole case of this form was reported by Dor in 1906. No parasite was demonstrated in smears, but cultures showed fine mycelium which branched dichotomously, as well as zooglea masses from which filaments radiated. These zooglea masses seemed to Dor to be made up of fragments of mycelium rather than spores. Cultures grew rapidly. The colonies reached their height in three days, remained isolated, were dull grayish, without aureole and scarcely elevated at all. At the end of a month they assumed a brownish tint but never became black in any portion. Clinically this one case was evidenced by large, multiple abscesses and was termed subacute. Guinea-pigs and rabbits were inoculated both with the secretion and with cultures, negative results being obtained in each instance.

The usual forms of sporotrichosis show either localized or disseminated lesions. It must be remembered that the disease involves lymphatics, mucous membranes, eyes, ears, joints, muscles and viscera as well as the skin. The cutaneous lesions are too well known to bear repetition. Their resemblance to the lesions of syphilis, tuberculosis and glanders makes their recognition of extreme importance. The occurrence of sporotrichosis in animals has been shown by Hyde and Davis, de Beurmann and Gougerot and others.

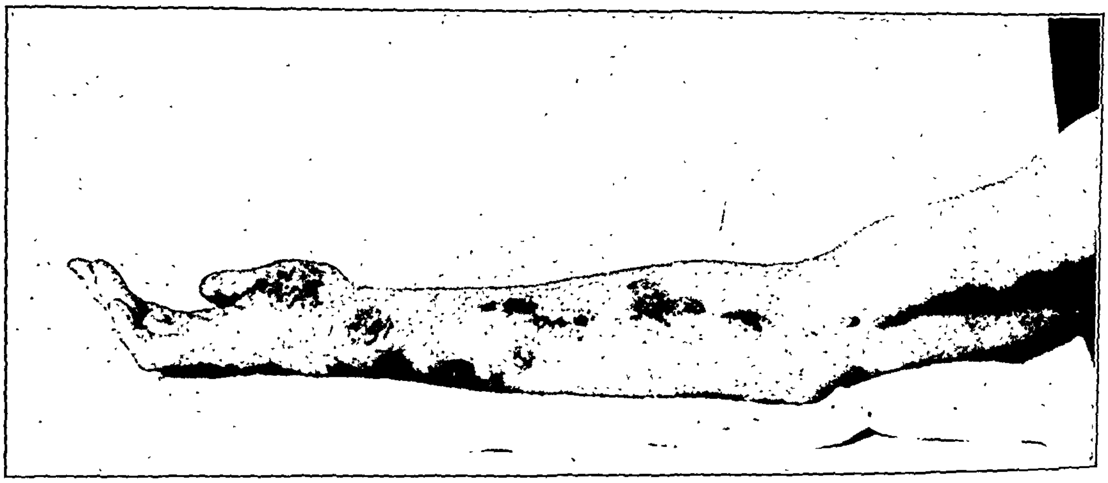

Fig. 3.—Sporotrichosis (Courtesy of Dr. John Armstrong).

In a botanic classification the sporothrix belongs with the *fungi imperfecti.*

Another mycologic subject about which much confusion has gathered is the relation between blastomycetic dermatitis and granuloma coccidioides of California writers. Do they represent different aspects of the same affection varying because of differences in environment, or do they stand for two distinct though related diseases? Should they be separated or classed together?

First of all, what do we mean by blastomyces? There are no less than three distinct views concerning blastomycetes. The first defines them strictly in accordance with etymologic signification, namely, budding fungi or yeasts. According to Vuillemin a blastomyces is any fungus which appears at a given time under the form of budding globules, whatever its relationship and whatever aspects it may reveal at other periods of its existence. Such a view would bring within the category of blastomycetes the organism of blastomycetic dermatitis as well as the yeasts of cancers, of rabies and of variola. The second view limits the term to the saccharomyces. The third reserves the name for fungi as yet unclassified.

De Beurmann and Gougerot dispose of all the formerly considered blastomycetes by grouping as exascoses the mycoses due to the saccharomycetes, the zymonemata and the endomycetes. Blastomycetes in their scheme represent simply the residue which is not amenable to classification. The zymonemata are so named because they exhibit at the same time both yeast and filamentous forms. In this group they would include both blastomycetic dermatitis and coccidioidal granuloma.

In making these two diseases identical they are simply following the custom of numerous other writers. It is a noteworthy fact, however, that granuloma coccidioides has occurred practically exclusively in California, where about twenty cases have been reported. Those who have followed these cases are, so far as I know, unanimous in the opinion that however close may be the relationship between their respective organisms, there yet remain sufficiently well-marked points of differentiation to make of each one a distinct entity. Clinically, as indicated by Hektoen, the nodules in the California disease bear a closer resemblance to the typical specific tubercle than do the nodules of blastomycetic dermatitis. There is, furthermore, a marked tendency toward the involvement of lymph-nodes in coccidioidal granuloma, while in blastomycosis this is slight. Blastomycosis also presents usually its primary focus in the skin with but slight tendency to become generalized, while in coccidioidal granuloma, though the disease may originate in the skin, there is most often generalization.

Microscopic appearances differ, according to Ophüls,[7] in that the blastomyces multiplies by budding while the coccidioidal organism multiples by endogenous sporulation. The latter is moreover a much larger body, attaining a size two or three times that of the blastomyces. In coccidioidal infection there is an absence of budding forms during its development in the tissues, though these forms are seen in blastomycetic dermatitis. There are also certain differences on artificial culture mediums. A further mark of differentiation sometimes urged is that blastomycetic dermatitis responds to the administration of the iodids, while coccidioidal granuloma resists them. A case of the latter recently under my care tends to deny this point.

This was the case of a man aged 28 who had lived for over two years in the San Joaquin Valley, the district in which most of these cases have originated. By occupation he was a machinist. The family history showed that an aunt on the maternal side had died of tuberculosis. The previous cutaneous history was negative. The previous general health had been good except for some cough and loss of weight for several months past. Dr. H. S. Warren of Coalinga, who referred the case, had found tubercle bacilli in the sputum.

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[7] Ophüls, W.: Jour. Exper. Med., vi, 443; Coccidioidal Granuloma, The Journal A. M. A., Oct. 28, 1905, p. 1291.

The lesion, which began as a pimple on the left side of the nose in August, 1912, had, when I first saw it two months later, attained a size of 3 cm. in diameter, extending to the upper lip. It was circular and elevated above the surrounding skin approximately 5 mm. In color it was violaceous and in consistence boggy. It was apparently made up of an agglomeration of papules. Scattered throughout the surface were numerous minute, superficial pustules. Subjectively it was painful, tender and intolerant of any save the blandest applications. There was no evidence of scar tissue; neither was there any sign of tendency to spontaneous repair. There was no suggestion of any verrucous element. The submaxillary lymph-node on the corresponding side was markedly enlarged.

Smears from the pustules showed doubly contoured cells which I considered blastomycetes. Dr. Ophüls, of whom I sought confirmation, identified them as coccidioidal fungi. Careful examination of the sputum revealed tubercle bacilli but no fungi. The cutaneous lesions as well as the enlarged lymph-node showed marked improvement under the administration of potassium iodid, but what was clinically a laryngeal tuberculosis quickly followed the pulmonary condition and the patient died within a few months of the first observation. Unfortunately a post-mortem was impossible.

Oidiomycosis is a term applied to a fungous disease of which only two cases have been reported: the first by Babès in 1882 as dermatomycosis discoidea exulcerans caused by the *Oidium subtile cutis,* and the second in 1910 by de Beurmann, Gougerot and Vaucher[8] due to the *Oidium cutaneum.* According to the latter observers the so-called *Oidium albicans* of thrush is not an oidium at all but belongs with the endomycetes; for the name oidiomycosis should be applied only to those affections due to the oidium defined by Linck as showing "rampant, septate mycelium of isolated filaments; simple, erect, septate conidiophores dividing into oval or cylindrical chain-like conidia."

The clinical aspect of oidiomycosis is that of an ulcerating gummatous nodule which resembles blastomycetic dermatitis, syphilis or sporotrichosis. The diagnosis is best made from cultures. On Sabouraud's medium, de Beurmann and Gougerot's case showed macroscopically the viscous glistening veil of yeasts. Microscopically they presented exclusively round, budding forms. Biologically they caused fermentation of glucose into alcohol and carbonic dioxid. From the first cultures the observers thought of saccharomyces of Busse-Buschke; later, in subcultures the colonies became godrooned or fluted, yellowish-white and resistant. Filamentous forms were added to the yeast-cells which suggested blastomycetic dermatitis. Finally subsequent transformations of the same parasite showed it fixed under exclusively filamentous forms, with all the characters of the genus oidium of Linck. Macroscopically the cultures were godrooned and even downy on potato; microscopically the oidium form was without mixture of yeast forms; biologically glucose was no longer attacked.

The *Oidium cutis* of Babès gave ulcerations of the skin of a rabbit and the *Oidium cutaneum,* though slightly virulent, is pathogenic for rats.

The prognosis is good and the disease yields to iodids as sporotrichosis and other mycoses.

The study of the oidium shows an organism exhibiting itself first as a yeast or blastomyces, then as one of the zymonemata of de Beurmann and Gougerot; that is, an organism showing both yeast and mycelial forms, and finally in the exclusively filamentous forms of the true oidia. It illustrates the transitions possible between the different genera of the same family. According to Gougerot it emphasizes the fact that a yeast form may be only a degraded aspect of a mycelial parasite of the genus oidium, and that the budding yeast aspect is only a non-specific morphologic aspect common to very different parasites.

If the characteristics of the mycelium as set forth by Linck are the sole criteria by which the true *oidiomycoses* are to be judged, then it would seem as if the organism of granuloma coccidioides was correctly named originally by Ricketts[9] when he applied to it the designation of *Oidium coccidioides.* In this case granuloma coccidioides would properly belong with the group of oidiomycoses. As we have seen there are similar though distinct forms of sporotrichosis, and also there are marked resemblances between blastomycetic dermatitis and granuloma coccidioides. The same sort of analogy exists between actinomycosis and mycetoma or Madura foot. There has been much discussion as to the relation between the organisms of the two diseases last named, the majority of writers favoring the view that each one has its own special organism, although admitting close relationship. Recent research according to Gougerot shows that these clinical units result from multiple parasites.

Mycetoma, which was first described over two hundred years ago, was first reported in America less than twenty years ago. Sutton has recently reported from Kansas City two cases of this mycosis which makes a total of seven American cases.

Hemisporosis, due to the *Hemispora stellata,* was first described by Gougerot and Caraven in 1908; the case being a primary osteitis of the tibia simulating syphilitic periostitis or post-typhoid osteomyelitis. Two subsequent cases have been reported, one resembling a tuberculous gumma, the other a syphilitic nodule.

The consideration of the ever-increasing list of mycosic disease leads to the opinion that many new forms are yet to be revealed. Presumably many of the known forms constantly escape recognition.

One who becomes interested in the group will not fail to be struck with the necessity of a clearer classification or even the general adoption of any classification. There seems to me urgent need for dermatologists to undertake more comprehensive work along the line of cutaneous mycology.

The clinical lesson is that any subcutaneous nodule or refractory abscess about whose etiology there is the slightest uncertainty should be subjected to careful investigation to determine the presence or absence of pathogenic fungi. To avoid discrepancies of description, a standard culture-medium should be employed.[10]

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[8] De Beurmann, Gougerot, H., and Vaucher, R.: Oidiomycose gommeuse ulcéreuse disséminée, Rev. de méd., December, 1910.

[9] Ricketts, H. T.: Philadelphia Med. Jour., April 27, 1901.

[10] In addition to the references already given, the following will be found of interest:

Castellani: Brit Jour. of Derm., November, 1911.

Brown, Philip King: Coccidioidal Granuloma, THE JOURNAL A. M. A., March 2, 1907, p. 743.

Gougerot: Gaz. des hôp., Jan. 5, 1913.

Hektoen: Systemic Blastomycosis and Coccidioidal Granuloma, THE JOURNAL A. M. A., Sept. 28, 1907, p. 1071.

Montgomery, F. H.: Cutaneous Blastomycosis, THE JOURNAL A. M. A., June 7, 1902, p. 1486.

Sutton: Mycetoma in America, THE JOURNAL A. M. A., May 3, 1913, p. 1339.

Weis: Jour. Med. Research, vol. vii, No. 3.

I wish to express my indebtedness to Dr. Ernst A. Victors of San Francisco for many slides and cultures used in the preparation of this article. I am further indebted to Dr. E. C. Dickson of the Leland Stanford Junior University for a culture of blastomycosis.

240 Stockton Street.

ABSTRACT OF DISCUSSION

Dr. Richard L. Sutton, Kansas City, Mo.: The question of group classification of the various pathogenic fungi is an exceedingly interesting one, but of more theoretic than practical importance. Sporotrichosis is a comparatively common disease in the Middle West. I have seen almost a score of cases and have heard of as many more unreported instances. From the results of a bacteriologic study of the organisms recovered from the lesions in four characteristic examples of the malady, I am forced to confess that I can find no essential differences between the organism originally described by Schenck and Smith and the so-called *Sporotrichium de Beurmannia* of Gougerot. In studying fungi, even more than in studying the ordinary pus organisms, slight cultural and tinctorial differences are frequently noted, just as slightly diverse clinical manifestations usually follow infection from various strains of staphylococci. While these slight differences mean little to the majority of bacteriologists, they may form ample material for theoretical controversy. Consequently, I agree with Page, Frothingham, Lutz and Splendore and other observers that up to the present time the *Sporotrichium schenckii* (including all of the various strains, of course) is the one and only cause of sporotrichosis. The fact that the disease may be local or general, trivial or fatal, means but little from an etiologic point of view. The existence of several clinical types of blastomycosis hardly warrants our separating the organism into forty-seven different varieties and appending to each a different name.

Mycetoma is an exceedingly rare affection in this country. In all the reported cases the infecting organism has been of the yellow variety. A beautiful example of this disease was recently reported by Allison of Texas (*Texas State Jour. Med.*, October, 1912, p. 166), which I unfortunately overlooked in a statistical study of the condition in America published a few weeks ago. The fact that the causative organism apparently possesses an affinity for the tendons and tendon sheaths may account for the frequency with which the foot is attacked and may prove of value from a bacteriologic point of view.

For several years I have been of the opinion that granuloma coccidioides was an aberrant type of blastomycotic infection. Recent studies have shown that environment will account for many slight clinical, pathologic and bacteriologic differences, even in so thoroughly understood a disease as lues (I of course refer to gangosa); consequently, it is difficult for me to forego the opinion.

Dr. H. E. Menage, New Orleans: In a case at the Charité Hospital in New Orleans about six months ago, we believed that we found an organism identical with that of de Beurmann.

Dr. A. Ravogli, Cincinnati: In the course of my private and hospital practice I have seen perhaps nine or ten cases of blastomycosis, and at the present time I have under my care two cases of sporotrichosis. I did not make this diagnosis without seeing the parasite under the microscope and getting a culture. My recent cases were of the tuberculoid type. The parasite has peculiar oval spores that make it easily recognized. I regard sporotrichosis as a much more stubborn affection than blastomycosis, as I have seen several patients with the latter recover, which so far I cannot say of sporotrichosis. Potassium iodid does these patients no good. I have obtained my best results from liquor formaldehydi and liquor cresolis compositus, mixed together. The application of this strong solution burns the surface of the patch and produces a necrotic eschar which sloughs off and leaves a clean healing surface. I give potassium iodid in these cases, but more as a matter of custom than because I think that it helps the patient.

Dr. Ernest Dwight Chipman, San Francisco: The point which I should like to add and emphasize is that to us in California there is a distinct difference between blastomycosis and granuloma coccidioides. The latter affection is almost always apt to become generalized and extremely virulent and rapid in its course. Many of these mycotic diseases are grave if unrecognized, and the point is to make an early, thorough and complete bacteriologic examination. The taking of cultures should be insisted on in all doubtful cases. I think we should have a standard culture medium, such as the glucose-gelatin-peptone medium. If we all use a similar standard culture medium, our results will be more apt to be similar.

Dr. David Lieberthal, Chicago: Before this discussion is closed, I wish to mention that Petersen of St. Petersburg (*Archiv für Dermatologie*, 1911) calls attention to the fact that the growth of the blastomyces is inhibited at a temperature of 40 C. He therefore treated blastomycosis of the skin by applying heat of higher degrees and accomplished excellent results.

TURPENTINE POISONING PRODUCING A SCARLATINOID RASH

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As I have been unable to find any mention, in any of the standard books of reference or in the current medical literature, of a rash appearing in turpentine poisoning, the following case is reported:

History.—E. E., a white girl, aged 20, single, a mill operative, applied for treatment in the medical dispensary of the Germantown Hospital, March 31, 1913. She complained of a bright red, itchy rash covering the face, neck, arms, forearms and trunk. No rash was seen below the waist-line.

Family history was negative. The patient had measles at 7 and scarlet fever at 8; the history was otherwise negative. Because the menses did not appear when due, the patient took 25 minims and twenty-four hours later 30 minims of spirits of turpentine. The next day her face began to swell, her body felt hot and itchy and she noticed the rash. The next day, seventy-two hours after the initial dose of turpentine, she applied for treatment.

Examination.—The lungs and abdominal organs presented nothing abnormal. The heart was in a state of slight tachycardia but otherwise normal. There was no enlargement of the lymph-nodes. The face was generally red and swollen, showing marked edema beneath the eyes. There were two small patches of vesicles, one on the forehead between the eyebrows and the other beneath the lower lip. The rash, which resembled that seen in scarlatina, fading on pressure, reappearing and again fading, extended over the face, arms, forearms and trunk (both anteriorly and posteriorly) to the waist-line. There was no fever, but the skin felt warm on palpation. The throat showed no congestion or membrane. The tongue was clean and showed no abnormal redness or prominent papillae.

On questioning, the patient stated that she was passing less urine than normally but that it did not look as though it contained blood. A specimen, obtained the next day, emitted a marked odor resembling that of violets. This specimen was lost, unfortunately, in transit to the laboratory.

April 4, 1913: Two days ago the rash and edema began to disappear, the vesicles drying up. There is seen, on close examination, a very fine desquamation over the entire rash.

April 7: The edema has disappeared. The rash is almost entirely gone. Urine: Normal odor. amber, acid, specific gravity 1.018, a trace of albumin, no sugar, no casts, sodium urate.

April 17: The rash is entirely gone. There are no signs of further desquamation. Urine: Amber, acid, specific gravity 1.023, a faint trace of albumin, no sugar, no casts.

DIFFERENTIAL DIAGNOSIS

Scarlatina.—The patient had no initial vomiting, no chill, no scarlet throat or tongue, no enlargement of the lymph-nodes, and no fever twenty-four hours after the rash appeared. There was no history of contact. The desquamation was much less for such a marked rash. There was a previous history of scarlet fever.

Varicella.—While I have seen chicken-pox with a scarlatiniform rash during my internship at the Municipal Hospital for Contagious Diseases (Philadelphia), this case showed no vesicles except those noted. Moreover, the rash in this case was more extensive and more pronounced than was that seen in the chicken-pox case.

Dermatitis Venenata.—This case occurred in the late winter. The rash was not vesicular except in the two small areas noted.

Endemic Typhus (Brill's Disease).—The patient had no headache, chill, fever, vomiting, sweat or redness of the throat. The rash was not morbiliform but was distinctly scarlatinoid.

SUMMARY

1. The patient presented a scarlatinoid rash in addition to the ordinary symptoms of turpentine poisoning, forty-eight hours after the ingestion of spirits of turpentine.
2. The toxic dose was very small—only 55 minims in twenty-four hours.
3. Desquamation began three days after the rash appeared.
4. The rash had to be distinguished from that of any of the diseases subject to quarantine.
5. There was no emmenagogue action of the turpentine.

5346 Wayne Avenue.

UNUSUAL BULLET WOUND OF FRONTAL SINUS

Kenneth Bulkley, M.D., New York

Bullet wounds of the head may be divided into two main classes, those involving the face and those involving the cranium. The latter may again be divided into those which penetrate and those which do not penetrate both tables of the cranial vault. In the nonpenetrating lesions only slight damage is usually done, but bullet wounds penetrating both tables of the skull should invariably be considered as serious accidents, for the majority of these patients die either from brain injury or from infection of the brain or its meninges.

The following case seems of interest as well illustrating a number of important points. The patient, a young girl of 18, while examining an old pistol, was shot, the end of the weapon being about a foot from the face. She was momentarily stunned but did not lose consciousness, and half on hour later was admitted to the accident ward of the Presbyterian Hospital, where I first saw her.

Examination showed a hysterical girl, fully conscious and rational. The upper portion of the face was considerably blackened with powder but neither eyebrows nor hair was burned. About half an inch above the root of the nose and slightly to the left of the midline was a clearly made bullet wound. In the entire absence of any sign of intracranial injury it was decided that this should be immediately explored.

Exploration was done in less than one hour from the time of the accident. Under ether anesthesia the wound area was shaved and cleansed and a vertical incision 1¼ inches long was made over the wound. The point of entrance through the anterior wall of the frontal sinus was found and rongeured to a size sufficient to explore the sinus. In the posterior wall of the sinus was found a similar but somewhat larger opening, irregular, and with comminuted edges. Wedged in the broken fragments were numerous hairs. Lying in the center of this posterior opening and on the uninjured dura mater was found a flattened lead bullet of about .32 caliber. This, together with all loose bone fragments and hair, was removed, and the wound partially closed about a loose gauze drain.

Recovery was uneventful. The patient was kept in bed for a week and her case was treated as one of cerebral concussion. The wound was dressed with continuous saline wet dressings. Temperature never rose above 99 F., and the wound healed without suppuration. There were no signs of meningeal irritation.

The case is unusual chiefly because of the fact that both bony walls of the frontal sinus were completely penetrated, but the dura was uninjured. It is instructive in showing the good results obtained from immediate exploration of a bullet-wound not giving signs of intracranial injury, a wound which if treated expectantly would unquestionably have suppurated and would not have healed without removal of the foreign body.

112 West One Hundred and Tenth Street.

ERYTHEMA SCARLATINOIDES

Leon J. Menville, M.D., Houma, La.

I wish to report an interesting case of erythema scarlatinoides.

Mary C., aged 10, when 3 months old, was noticed by her mother to have a red rash covering the whole body, except the face, the tongue also being red. In a day or two there was a general desquamation with itching. A diagnosis of scarlet fever was made. The patient has had a yearly recurrence of the condition, which shows itself in the latter part of the spring.

I saw the patient for the first time in June, 1913. She was fairly developed and nourished. The heart, lungs and abdomen showed nothing abnormal. The liver was palpable 2 cm. below the costal border in the nipple line. The spleen was not palpable. The tongue was red, but the throat normal. She had a fever with a temperature of 100 F., with headache and a chilly feeling. Urine: specific gravity 1.020, acid in reaction, no sugar, albumin, acetone, and only a trace of indican. Blood examination revealed nothing abnormal. The body was covered with a red rash (resembling scarlet fever), from the neck down to the toes, the face being exempt. There was an intense itching. Twenty-four hours after there was a general desquamation, beginning on the chest, at which place the rash always makes its first appearance. The mother informs me that the attacks are becoming more severe each year, that is, the constitutional symptoms are. The patient has never had drug erythema.

Practices Leading to Commercialism in Medicine.—Competition, contract practice, splitting fees and advertising are some of the results of a degree of commercialism tolerated by the medical profession. An effort is being made here and there to suppress them, and we not infrequently hear the cry of "intolerance" from those who think their vested rights are being assailed. The commercial man masquerading in the profession, the medical faker and the newspaper man who profits from both are heard from immediately whenever an effort is made to put a stop to newspaper advertising. The "specialist" who lacks special ability and the general practitioner who lacks both professional ability and nerve to make legitimate charges unite in defending the practice of fee-splitting. They are all wrong; such practices have no place in the medical profession and should be eliminated, protest or no protest. It is to be hoped that our county societies will take the subject of medical ethics in hand, and with gentle firmness see to it that these abuses are corrected as speedily as is consistent with justice.—Editorial *Texas State Jour. Med.*

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SATURDAY, AUGUST 9, 1913

HEAT REGULATION IN FEVER

The prominent participation of the nervous system in the complex which we commonly designate as fever is undeniable. Whether it be the increased irritability of a heat-regulating center or some peripheral factor that is given chief emphasis in the genesis of the increase in temperature, there is almost always a heightened production rather than a diminished dissipation of heat somewhere which needs to be explained. This increased liberation of heat which attends the febrile processes is usually attributed to an augmented metabolism associated with increased innervation or stimulation of the muscles or other organs. Thus the nervous system is assumed directly to provoke the exaggerated transformation of energy.

If this point of view is correct then the exclusion of the nervous system, the omission or failure of the stimulation of the heat center, ought to result in a return to normal conditions of heat production in the tissues. Otherwise we must assume that they can be incited to exaggerated combustion by some means other than a purely nervous stimulus. The question is open to experimental solution. It is known that in certain forms of fever the increased heat production goes on solely at the expense of carbohydrates in the active tissues. In the isolated heart, for example, the continued maintenance of the rhythmic beat by the perfusion methods now in vogue in the laboratory is attended by a fairly uniform consumption of sugar which can be accurately measured. Mansfeld[1] has observed that if febrile processes are provoked by mechanical stimulation of the heat centers and the heart is then removed and perfused in comparison with hearts from non-febrile animals, a decided increase in the consumption of sugar may be noted. If this augmented metabolism of the heart muscle is a true expression of the tissue processes responsible for the increased heat production in the attendant fever, evidently the heat-yielding activity may be provoked independently of any immediate nervous stimulus; for the latter is excluded by the very fact of the heart's isolation and removal from the body. The conditions which determined the heightened heat production must reside in the cells themselves. They are doubtless started by the initiative of the nervous system; but the changes thus awakened can be continued quite independently of extrinsic nerves.

How shall we think of heightened metabolism and increased heat production started by nervous participation but subsequently maintained independently thereof? The possibilities of the hormones at once come to mind. Liberated and started on their regulative road by nervous impulses they become the independent masters of the febrile state. It is a fascinating hypothesis involving the interrelation of both nervous and chemical factors —but it is after all as yet merely a hypothesis.

MUSHROOM FALLACIES

Now that the Fourth of July with its tetanic dangers has passed, we may prepare for the usual "epidemic" of mushroom poisoning which seems to be an inevitable accompaniment of the summer season. The physician, rightly prized in many communities as a cyclopedia of dependable information on matters of hygienic import, is often asked to furnish some criterion of safety in relation to the dietetic use of mushrooms. There is a popular tendency to restrict the name "toadstool" to poisonous species and that of "mushroom" to the edible ones; but since one cannot tell, except by trial, whether a particular "toadstool" is poisonous or not, the distinction is neither satisfactory nor advantageous.

Many reputed tests to distinguish the innocent from the harmful toadstool are current and are implicitly believed in by some. It cannot be too emphatically stated, therefore, that so far as is known there is no single guide, with the possible exception of a chemical analysis, which will give results of any value whatever. Every scheme for distinguishing edibility in these fungi should be decisive and give uniform results. Some of the alleged tests deserve mention in order to point out their unreliability and their danger.[1] Among them the so-called "silver test" is most prevalent. It is believed that a silver spoon or coin placed with toadstools while cooking will demonstrate by blackening or failure to blacken whether or not the fungi are safe to eat. It need only be said in criticism that there are both poisonous and non-toxic species which act alike on silver. Again, no reliance is to be placed on the contention that if the outer (upper) skin of the top of the toadstool peels off readily, such a species is edible. Some poisonous species also will "peel." Flavor has often been alleged to serve as a reliable guide to edibility, the bitter or peppery species being charged with detrimental attributes. Experience shows, however, that the most poisonous toadstools are not at all disagreeable in respect to the flavor of the raw tissues. And so we might mention further the alleged telltale color changes that are supposed to appear when toxic mushrooms are bruised or broken; or the existence of a milky juice, or the susceptibility of the fungi to the invasion of insects, which are believed to avoid the pernicious varieties. None of these "tests" can be applied with any certainty. As the "proof of the pudding is in the eating thereof," so the surest way of learning to distinguish the poisonous from the innocuous mushrooms is by eating them—a heroic procedure—or by learning the experience of others. There is no royal road to mushroom knowledge, but one must learn to know the various species as one learns to recognize the familiar plants of the forest, the field and the garden.

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[1] Mansfeld, G.: Ueber das Wesen der chemischen Wärmeregulation, Zentralbl. f. Physiol., 1913, xxvii, 267.

[1] A group of unreliable tests has been published by Setchell, W. A.: Mushrooms and Toadstools, University of California, College of Agriculture, Agric. Expt. Sta. Circular 84, January, 1913.

To those who cherish the hope that the mushroom, often proclaimed as the vegetable beefsteak which Nature lavishly offers at every hand, may solve some of the problems of economy in nutrition, we can give little comfort; for as has been pointed out before,[2] even the most nutritious mushrooms are of little real nutritive value. Their chief claim to dietetic recognition lies in their use as food accessories and dietary condiments. In no wise can they be regarded as a substitute for the substantial meats or the familiar vegetable products ordinarily consumed by man.

THE TRIKETOHYDRINDENHYDRATE OR "NINHYDRIN" REACTION

It has been well said that every new reaction introduced into physiologic chemistry furnishes the stepping-stone to a new discovery. Recently much interest has been centered in an exceptionally delicate reaction for proteins and amino-acids that promises to fulfil the expectation which its novelty has awakened. Triketohydrindenhydrate, discovered by Ruhemann and already known under the abbreviated designation of "ninhydrin," gives an intense blue color when compounds containing the amino grouping in the alpha position are heated with solutions of the reagent. It is this property which makes the reaction serve as a test for amino-acids and such complexes thereof as are found in the proteins.[1]

The fact that "ninhydrin" reacts with protein derivatives which no longer give the delicate biuret reaction has made it doubly useful in following the transformations of the albuminous substances into their non-protein components.

Abderhalden has applied the new reagent in his serum test for the diagnosis of pregnancy which has already become a routine procedure in some quarters. More lately, in order to ascertain to what extent abiuret compounds, which react with triketohydrindenhydrate, though they do not give the classic biuret reaction, may be distributed in the organism, Abderhalden and Schmidt[2] have made an extensive search for such reacting substances. These were duly found existent in fresh milk, urine, saliva, blood-plasma and serum, lymph, sweat, the contents of cysts, egg-white and meat.

In a practical way the discovery of compounds reacting with "ninhydrin" in sweat is important; for hereafter it will be necessary, in the execution of tests involving the use of the reagent, to employ special precaution against contamination with skin secretion, small traces of which are sufficient to initiate a positive reaction.

As the result of applying the new "ninhydrin" test, Abderhalden has already found that certain biologic reactions hitherto ascribed to the proteins are associated with the presence of abiuret contaminations which give the reaction. Thus it appears that various proteins which provoke distinct physiologic responses when introduced parenterally into the body lose this property if they are first purified by dialysis until the compounds reacting with "ninhydrin" completely disappear. The bearing of this on the study of anaphylaxis will at once be apparent.

Indeed, Abderhalden insists that henceforth all proteins employed in anaphylactic investigations must be subjected to thorough purification by dialysis before the responses which they may elicit are charged to the protein *per se* rather than to derived products accompanying it. We may be prepared, therefore, for some revision of current views on the subjects affected by such investigations.

FINANCIAL FACTORS IN THE MILK-SUPPLY PROBLEM

In the hue and cry which is raised from time to time regarding the condition of the milk-supplies on which American communities and municipalities depend, we fear that too little attention is given to some of the economic factors which determine the situation. The physician is interested in the question from various points of view. Milk may become a carrier of disease, and in this respect the purity of the supply must be protected at any cost; but the quality of milk has an immediate interest from a nutritive point of view as well. Milk is, of course, indispensable in the modern practice of infant nutrition, and to a certain extent in the dietary of the sick; aside from this, however, the use of milk may be regulated in no slight degree by the same considerations that apply to other foods which enter widely into the daily diet of man.

The friction which is so commonly evinced between the consumer and the producer of milk is the outcome in part of misunderstanding on both sides. We are all too prone to charge the farmer with a sort of innate stubbornness when reform measures are suggested for the vocation to which he is devoted. On the other hand, those who clamor for clean milk and pure food, who insist on sanitary conditions and rigorous inspection to enforce them, are often blind to the financial obligation involved therein. They are sometimes the first to resent a rise in the price of the commodity.

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[2] The Place of Mushrooms in the Diet, editorial, THE JOURNAL A. M. A., July 13, 1912, p. 123.

[1] Abderhalden, E., and Schmidt, H.: Ueber die Verwendung von Triketohydrindenhydrat zum Nachweis von Eiweissstoffen und deren Abbaustufen, Ztschr. f. physiol. Chem., 1911, lxxii, 37. Abderhalden, E.: Abwehrfermente des tierischen Organismus, ed. 2, Julius Springer, 1913.

[2] Abderhalden, E., and Schmidt, H.: Einige Beobachtungen und Versuche mit Triketohydrindenhydrat (Ruhemann), Ztschr. f. Physiol. Chem., 1913, lxxxv, 143.

There are economic laws which come into operation in the milk business precisely as in any other industry. Dr. Harding and Mr. Brew of the New York Agricultural Experiment Station at Geneva have attempted to analyze some of the factors frequently overlooked.[1] They point out that the financial stimulus is the strongest force which can be enlisted in the improvement of municipal milk-supplies. The latter are not likely to become better as long as the largest profit is attained by the production of dirty milk. The New York experts note that the attempts at improvement of milk-supplies too frequently have not taken into consideration the financial magnitude of the business interests which they have undertaken to control. The lack of familiarity with the financial side of the milk business on the part of the reformers is partly due to the fact that only a small part of the investment is apparent to them and largely because detailed information on the subject has hitherto not been generally available.

A few of the statistics in the matter may be helpful in guiding the medical members of the communities, since they are usually at the front of any movement for the betterment of living conditions. It has been estimated in Harding and Brew's study of a small city with a population of 13,000 that the dairy capitalization amounts to $36.42 per capita of the people being supplied with milk. Considered from the agricultural point of view, the capitalization amounts to $763 per cow of which the producer furnishes $680 and the retailer $83. A financial analysis on this basis shows that the margin of average profit is narrow; and it is this meagerness of financial return that makes the dairy business respond promptly to any opportunity for increased gain.

Harding and Brew believe that their five years' study of a municipal milk-supply indicates fairly well that the farmers are prepared to produce any grade of milk which the market desires. They will produce it as soon as the market clearly states its wants and offers a price which will make the production reasonably profitable. The former system of wholesale prices according to which milk was bought by weight or measure regardless of its commercial quality practically compelled the production of the cheapest and dirtiest possible supply. At present prices the margin of profit in the production of milk is so narrow that the farmers cannot afford to act the part of philanthropists by the production of a higher grade of milk than the market demands and is willing to pay for. On the other hand, the farmers have a business sense which quickly leads them to produce the grade of product for which they can obtain the largest margin of profit. The important fact which stands out plainly in the present situation is that while the farmers are able and willing to produce a sanitary milk whenever its production is the more profitable, they cannot be expected to continue such production whenever there is greater profit in the making of dirtier milk.

Under present conditions there is a demand for milk for three distinct purposes: for the feeding of infants, for use by adults at table, and for cooking. The simplification of the municipal milk problem lies along the line of defining and establishing commercial grades of milk which shall correspond to these market demands. Whenever it becomes possible to buy milk by such grades and feel sure that the milk is true to grade, the supply on the market will become just as clean and pure as the purchasing public desires it to be. The grading of milk means inspection and control. The potency of this power may be very great. An intelligent application of it may bring remarkable improvement with the approval of all concerned; its abuse may lead to unjustifiable hardship with ultimate detriment. Ignorance or inefficiency in the personnel of an inspection staff on which the duty of scoring milk devolves as a basis for contracts between buyer and seller usually leads to a return of insanitary practices.

As is so often the case in every-day life, the satisfactory performance of a duty or the efficient conduct of an operation ultimately depends on the human factor. How important this may become in the immediate future of the milk-supply situation is summed up in the New York report, in reference to appointments filled in the conventional way, in these words: "The character of these appointments and the results on the milk situation which followed them indicate clearly that there must be a radical change in the prevailing point of view regarding the qualifications for municipal appointments before we shall have a public service which will command the respect and cooperation of the milk producers and retailers. Without such respect and cooperation practically nothing can be accomplished."

RABIES

The popular belief that there is an undue prevalence of rabies during that part of the year known as "dog days" has been pretty thoroughly exploded; yet the heated period of the year does bring this subject to mind. It is fully recognized that not all dogs called "mad" are suffering from rabies, and that in hot weather dogs may have convulsions from heat-stroke or from other causes as well as from rabies. In fact, many have found that this good-natured animal may be annoyed to the point at which it will turn on those who pet it; especially will a harmless, starved mongrel, annoyed by the heat, the dust, the fleas and the persecution of persons and things that surround him, attempt to defend himself and snap. Immediately those in the street jump at the conclusion that the dog is mad, and a scare is on. It must be remembered, however, that in the mingling of a multitude of like animals which are constantly snarling and quarreling among themselves, when one animal is infected the chances are that the infection will be spread rapidly. Consequently, it is timely to bring this subject to the attention of our readers.

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[1] Harding, H. A., and Brew, J. D.: The Financial Stimulus in City Milk Production, New York Agric. Expt. Sta., Bull. 363, April, 1913

While the precaution already suggested—that not every dog that bites is the subject of rabies—should be borne in mind, nevertheless, for the welfare of the person who may have been bitten by a dog, it is important to know whether or not the dog is rabid. It is unfortunate when an animal that has inflicted such a wound is destroyed immediately. The sane procedure is to quarantine it, in order that a definite diagnosis may be determined. It should be properly guarded and kept from contact with other dogs or animals, but under comfortable conditions. If it is rabid the fact soon becomes evident. If it is simply a case of bad temper and not of disease, the proper punishment or disposal of the dog may be decided after this fact has been established. If for any reason it becomes necessary to kill the animal at once, or if this mistake has been made, the head and neck of the animal should be packed in ice and sent to a properly equipped laboratory as quickly as possible, in order that an examination for Negri bodies can be made.

It is hardly necessary to suggest that a wound resulting from the bite of an animal should be thoroughly cleansed; concentrated phenol (carbolic acid), should be thoroughly applied, and then neutralized with alcohol, and the wound covered with a large, wet, antiseptic dressing. Of course this local dressing alone is not to be depended on when the diagnosis of rabies in the animal inflicting the wound has been established. As soon as this condition of the animal is definitely determined, the patient should be given the benefit of the Pasteur treatment, which is most effective when begun within a fortnight after the wound was inflicted.

More important than the cure of hydrophobia is its prevention by administrative measures. The British muzzling order, absolutely enforced, has rendered Great Britain practically free from rabies. Surely all dogs worth the price of a muzzle or a leash should be thus restrained; the rest should be destroyed. This procedure would rob rabies of its terrors.

Current Comment

MERGERS OF MEDICAL COLLEGES

The latest merger of medical colleges reported[1] is that of the Atlanta College of Physicians and Surgeons with the Atlanta School of Medicine. The new school thus formed will take the name of one of the former college's predecessors, the Atlanta Medical College. This merger brings a united medical profession of Atlanta back of the movement to create a high-grade medical college in that city, and there are excellent chances for success. This merger leaves in the entire South only one city—Dallas, Tex.—which has more than one regular medical school for white students. In the whole country, in fact, there are now only ten cities having two or more regular medical colleges for white students, these with the number of such colleges, respectively, being: Chicago, 6; New York, 5; Philadelphia, 5; Baltimore, 4; St. Louis, 4; Boston, 3; San Francisco, 3; Washington, 2; Dallas, 2, and Omaha 2. In 1904 there were twenty-four cities having from two to eight regular medical schools. The most famous medical centers in Europe—for example, Berlin, Paris, Vienna—have but one large medical school each which makes systematic use of all the clinical facilities of those cities. There is no valid reason why this country should not have equally famous medical centers, but this cannot be so long as the highest development is prevented by the existence of two or more competing medical schools. For the further improvement, not only of undergraduate but also of postgraduate medical instruction in this country, there should be other mergers in the ten cities named.

THE LAY MOTE AND THE PROFESSIONAL BEAM

A physician in Maryland writes:

> You have passed a mild condemnation on nursing schools that teach nursing by correspondence methods. Cannot you take a concrete case—the *Ladies' Home Journal*—and show the editors that they are bolstering up frauds when they take and publish such advertisements? I called their attention to the immorality of such advertisements, but an unknown individual has no weight in such an instance. If the weight of The Journal's influence is brought home to them, they probably will take notice, but at the moment "they see nothing wrong" in them.

Our correspondent is mistaken in thinking that the protest of an individual has no weight. It has great weight with every honest editor and publisher. The trouble lies deeper. Every criticism, by the medical profession, of advertisements that appear in the better class of lay journals, is weakened by the unfortunate fact that medical periodicals, some of them controlled by the organized profession, carry advertisements practically identical with those criticized. Naturally it is hard for physicians to persuade laymen that there can be anything particularly bad in advertisements that are accepted by the official organs of the medical profession. The greatest handicap that we have to-day in our fight for truthful advertising is that imposed by ourselves. The most discouraging feature of our propaganda for reform is the fact that where we ought to be able to look for help and support, we get apathy or opposition.

NEW JOURNAL OF TROPICAL DISEASES

The American Society of Tropical Medicine with July began the publication of an official journal called the *American Journal of Tropical Diseases and Preventive Medicine*. The new journal is issued from New Orleans in connection with the School of Tropical Medicine of Tulane University, and is printed at the university press.

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[1] Merger of Atlanta Colleges, The Journal A. M. A., June 21, 1913, p. 1967.

Dr. Creighton Wellman is editor-in-chief, assisted by Drs. Charles Chassaignac and Isadore Dyer and a staff of collaborators in various parts of the United States and our island possessions. The study of tropical diseases, so important in preventive medicine, has an added interest for the profession of the United States on account of our tropical possessions, the opening of the Panama canal, and the increased governmental interest in our West Indian and Central American neighbors. It is entirely fitting that the new journal should be under the editorial direction of the men connected with the School of Tropical Medicine at Tulane, both by reason of the enterprise of the university in establishing a department of tropical medicine and the distinctive service rendered by the men connected with that department in research in tropical medicine. The first number of the new journal has over one hundred pages and is well printed and illustrated. It contains a number of original articles on various topics of tropical medicine, together with a department of abstracts of the literature pertaining to this branch, book reviews, news items, etc. The initial number sets a high mark in the journalism of the special societies.

THE BLOOD-SUGAR IN HUMAN DIABETES

Recently we referred to what may be termed standard or normal figures for the sugar content of the blood[1] as they have been established by the current improved methods of biochemical analysis. In round numbers, 0.1 per cent. of sugar may be taken as the standard for the individual in health and in the absence of disturbing features. It is well appreciated to-day that the typical forms of diabetes are accompanied by a hyperglycemia, that is, increased sugar content of the blood, which often comes into evidence on analytic examination even when the other symptom—glycosuria—fails to be manifested. A large number of data recently collected by Rolly and Oppermann[2] in Leipsic give some idea of the range of pathologic variation in diabetes. Figures exceeding 0.4 per cent. of sugar in the blood are not uncommon. In diabetic coma even larger amounts were found, ranging beyond 1 per cent. Under these conditions the cerebrospinal fluid, which may serve as an illustration of a tissue fluid, also was exceptionally rich in sugar, quantities equivalent to 0.5 per cent. being not uncommon. Inasmuch as the more marked increments in sugar content were coincident with the genesis of the comatose conditions, they point to an insufficiency of the kidney as the primary cause of both these phenomena. The permeability of the kidney for sugar appears to be decidedly variable even in the same diabetic individual. Here is evidently one point of attack of the so-called cures for diabetes—the oatmeal dietary, etc. By virtue of some component in the food used, they may act on the kidney filter to alter its permeability, and thus by diminishing the excretion give rise to the appearance of increased tolerance for carbohydrate. Unquestionably, further study of the sugar content of the blood will help to clarify some of the obscure problems created by apparently successful empiric methods of treatment.

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[1] The Sugar Content of Human Blood, editorial, The Journal A. M. A., April 19, 1913, p. 1228.

[2] Rolly, F., and Oppermann, F.: Der Blutzucker bei Diabetes mellitus, Biochem. Ztschr., 1913, xlix, 278.

Medical News

ALABAMA

Ambulance for Employes.—The managers of the Coosa River Dam have introduced an ambulance to be used in conveying patients to railroad stations or hospitals, when necessary.

New Dispensary for Birmingham.—A committee of seven has been appointed by the president of the University of Alabama to consider ways and means of raising $100,000 for the establishment of a university free dispensary building in Birmingham. At present the dispensary is conducted in a small cottage near the medical college where about one thousand patients a month have been treated.

CALIFORNIA

Lane Lectures.—The fourteenth series of Lane medical lectures will be given by Sir Edward Schäfer, professor of physiology in the University of Edinburgh, Scotland. The lectures will be on "The Functions of the Ductless Glands, Especially in Relation to Other Secreting Organs." They will be delivered at 8 p. m., September 3, 4, 5, 8 and 9 in the Lane Hall of the Stanford University Medical Department, Sacramento and Webster Streets, San Francisco.

Personal.—Dr. Allen R. Powers, Rio Vista, has been appointed surgeon to the Solano Irrigated Farms, Incorporated, and to the Oakland, Antioch and Eastern Railroad.——Dr. J. W. Clark has resigned as a member of the board of managers of the Napa State Hospital.——Dr. N. P. Crooks, surgeon in the employ of the Toya Kisen Kaisha for twelve years, formerly of Santa Barbara, is touring the United States during a six months' leave of absence.——Dr. P. V. K. Johnson, Los Angeles, has been appointed a member of the Bureau of Municipal Nursing.

ILLINOIS

The Illinois Medical Journal.—The *Illinois Medical Journal*, which is the official organ of the State Medical Society, has changed its style of "make-up," following the lead of a number of other state journals which have become uniform in size. This, besides being a distinct improvement on the style of the old journal and affording opportunity for better work by the printer, is said to lessen the expense of publishing.——Dr. George Edwin Baxter, assistant editor of the *Illinois Medical Journal*, after eight years of faithful and efficient service, has resigned, and Dr. Henry G. Ohls is now the managing editor of the journal.

Pass Civil Service Examination.—The following have passed the State Civil Service examination for assistant physicians: Drs. Harry M. Thometz, Chicago; Walter C. Cook, Kankakee State Hospital; Clara E. Hayes, Peoria; Otis Like, Curran; Egbert W. Fell, Medical Lake, Wash.; James K. Pollock, Peoria; Walter A. Ford, Watertown State Hospital; Warren G. Murray, Springfield; Elgen C. Pratt, Kankakee State Hospital; Howard T. Child, Leupp, Ariz.; Ellsworth Trowbridge, St. Joseph, Mo.; Joseph Cooperstein, Chicago; Arthur H. Deppe, St. Louis, Mo.; Edward Strickler, Elizabethtown, Ky.; Faith E. Spangler, Chicago State Hospital; Philip S. Waters, Anna State Hospital; Clara Dunn, State Training School for Girls; Thomas F. Neil, Watertown State Hospital, Watertown.

Chicago

Personal.—Dr. Oliver S. Ormsby, Dr. and Mrs. Frank C. Todd, Dr. William Allen Pusey and Dr. Anthony Krygowski have sailed for Europe.——Dr. L. Munger, who was injured recently at Clark Lake, is convalescent and has returned home.——Dr. Peter C. Clemenson has been appointed a member of the Board of Education and Dr. Frank J. Pokorney a member of the Library Board.——Dr. E. P. Murdock recently fractured his leg in the fall of an aeroplane near Spokane, Wash.

Hospital Day Fund.—Mrs. John B. Murphy, treasurer of the Free Bed Fund of the Chicago Hospital Aid Association, in her report of the subscriptions and contributions made in May last, for the benefit of the hospital fund, states that $25,000 was collected, that nearly $9,000 is being held at the State Bank of Chicago for a contagious disease hospital and research fund when the institution will be established; $8,833.33 has been received for the Chicago Baptist Hospital and a similar amount has been expended for the sick poor in various hospitals, and that a balance of $7,558.50 is still in the hands of the association awaiting distribution.

INDIANA

New Officers.—Indianapolis Board of Health: president, Dr. Mavity J. Spencer; vice-president, Dr. T. Victor Keene, both reelected.

Sanatorium Burns.—Fire destroyed the Spiceland Sanatorium July 22. The twenty patients were removed in safety. The loss is estimated at about $20,000, one-third covered by insurance.

Personal.—Employees of the Indianapolis City Board of Health presented a surgical outfit to Dr. M. J. Spencer, president of the board, on the occasion of his birthday, July 29.——J. F. Spaunhurst, an osteopathic practitioner of Indianapolis, and Dr. S. G. Smelser, Richmond, have been reappointed members of the State Board of Medical Registration and Examination.——Dr. T. C. Kennedy, Indianapolis, who has been seriously ill, is reported to be improving.

Sanatorium Notes.—The New Albany Antituberculosis Association is said to have selected a site for the proposed Floyd County Antituberculosis colony. The plans for the colony provide for from twelve to twenty-four shacks with an administration building.——Cass County Association for the Prevention and Cure of Tuberculosis is directing the construction of a tuberculosis cottage to be established in connection with the Chautauqua, to show the ravages of tuberculosis and to teach methods of combatting and preventing the disease.——Fort Wayne Tuberculosis Society has ordered a large number of open tents or canopies for the use of tuberculosis patients.

IOWA

Personal.—Dr. H. H. Nichols, Marshalltown, who was operated on for appendiceal abscess at St. Thomas' Hospital, July 26, is reported to be steadily improving.——Dr. Alexander S. Begg, Des Moines, has been appointed instructor in anatomy in Harvard Medical School.——Dr. and Mrs. F. S. Feeney, New Hampton, have returned from Europe.

State Board Conference.—A campaign for strict adherence to the sanitary laws in the rural districts of the state is planned in a conference to be held between Dr. Walter L. Bierring, chairman of the State Board of Health, Dr. G. H. Sumner, secretary, and L. Higgins, engineer. Especial care is to be taken of the water system of the smaller towns in the state.

MARYLAND

Personal.—Drs. John E. Legge and William L. Burns, both of Cumberland, have sailed for Europe.

Campaign against Disease.—A campaign against disease inaugurated by the Medical and Chirurgical Faculty of Maryland will be carried into Frederick next week. An exhibit covering 120 feet will be installed at the Y. M. C. A. Building and addresses will be made on tuberculosis, alcohol, mental and social diseases and infant mortality.

Baltimore

The University Library.—The annual report of the library of the Department of Medicine of the University of Maryland for the fiscal year shows that the library had on June 1, 1913, 11,655 bound volumes and since that date the collection of the Baltimore Medical College, amounting to about 1,000 volumes, has been added.

Personal.—Dr. Thomas P. Sprunt has been appointed professor of pathology in the graduate school of medicine of the University of Alabama, Mobile.——Dr. Frederick H. Baetjer, who lost four fingers of his right hand a year ago from x-ray burns, is recovering from an operation of grafting the skin of his abdomen on the hand.

MASSACHUSETTS

Personal.—Dr. Arthur A. Howard has been appointed physician in chief of the Boston Dispensary Hospital for Children and the Children's Medical Out-Patient Department, vice Dr. William P. Lucas, resigned to become professor of pediatrics in the Medical School of the University of California.

Uniform Policy in Treatment of Tuberculosis.—Dr. John B. Hawes, speaking before the House of Recess committee on tuberculosis in Boston, July 17, stated that the state's policy during the treatment of tuberculosis is well defined and aims at the following results:

1. A state sanatorium (Rutland) reserved for really incipient and favorable cases where the latest and best ideas of sanatorium treatment can be carried out.
2. Other state sanatoria, nor far distant from the large centers of population (North Reading, Lakeville and Westfield), to which can be sent incipient consumptives should they prefer this to Rutland, and also moderately advanced and chronic advanced consumptives who have good chances of arrest and cure under real sanatorium treatment.
3. Local municipal hospital in each city and town where advanced and dying consumptives can be isolated, cared for and made as comfortable as possible away from their homes and yet near to family and friends.
4. A tuberculosis dispensary in each city and town, provided with a sufficient number of trained nurses or social workers, who can direct patients as to home treatment while waiting to get into a sanatorium or hospital, who can help and advise the family after the patient has gone, and who can see that the patient carries on treatment, keeps under supervision, or has suitable employment on his return.
5. A state sanatorium to which young children can be sent and given schooling while taking the cure.
6. More stringent enforcement of the law, which should regard the vicious, alcoholic and careless consumptive as a criminal, and to be treated as such.

Dr. Hawes then explained the conditions, relative to hospitals, existing in each of the cities of the Commonwealth, as discovered in the investigation made by his commission.

MICHIGAN

European Travelers.—Drs. M. E. Silver, E. A. Chapoton, Angus McLean and J. M. Robb and Dr. and Mrs. William H. Browne, Detroit, Drs. Charles E. Stewart and J. T. Case, Battle Creek, and William Northrup, Grand Rapids, have sailed for Europe.

Personal.—The house of Dr. F. H. M. Long, Eaton Rapids, was struck by lightning, July 22, and entirely destroyed.——Dr. E. A. Chapoton, vice-president of the fire commission of Detroit, has resigned.——Dr. and Mrs. W. K. Kwiecinski, Detroit, celebrated their twenty-fifth wedding anniversary, July 26.

MINNESOTA

Improvements in Hospital.—The St. Paul Hospital will be ready to receive patients in October or November, after $20,000 has been spent for improvements. The institution will accommodate seventy patients.

Personal.—Dr. A. F. Schmitt has been appointed local surgeon of the Chicago Great Western Railroad at Mankato, vice Dr. A. O. Bjelland, deceased.——Dr. J. Clark Stewart, Minneapolis, who has been seriously ill in Baltimore, has returned home convalescent.

University Clinics in St. Paul.—President Vincent of the University of Minnesota proposes to have the clinical work at the St. Paul City and County Hospital so divided that the teaching faculty of the medical school will receive half the patients. On October 1, the present staff system of the hospital will be changed and arrangements will be made whereby half the staff will be members of the faculty of the university medical school and on duty all the year round, while the other half will consist of physicians not connected with the university, who will serve for periods of three months.

MISSOURI

Hospital Changes Location.—Drs. R. M. Benson and W. G. Atwood have purchased property at 110 North Main Street, Carrollton, and will transfer the South Side Hospital to this location, about September 1.

Personal.—Dr. George E. McNeil, house surgeon at the Missouri, Kansas and Texas Hospital, Sedalia, recently suffered the amputation of a finger.——Dr. T. M. Monroe, Laddonia, was seriously injured when the automobile in which he was crossing the Alton tracks, was struck by a passenger train, July 24.——Dr. Philip Scholz, St. Louis, is reported to be in a critical condition, at St. Mary's Infirmary, from injuries received July 27, when he was struck by an automobile while alighting from a street car.

NEW YORK

Whirlwind Campaign for Hospital.—A twelve-day whirlwind campaign for the purpose of raising $90,000 is being conducted in behalf of St. Joseph's Hospital at Far Rockaway. The funds are to be used in the construction of a new building for the hospital.

Investigating Summer Resorts.—Inspectors of the State Health Department are making a tour of the hotels, summer camps, etc., in the Adirondacks, with a view of ascertaining their sanitary condition and environment. Attention is directed principally to those places whose sanitary condition has previously been criticized.

Reorganization of State Health Department.—Plans for the reorganization of the State Health Department under the law passed by the last legislature were discussed by the State Health Commissioner and his division chiefs at a meeting, July 10. One of the most important features of the reorganization is provided for by the vital statistics law. In the reorganized department, the commissioner will have to appoint a deputy commissioner, nine heads of divisions and supervisors for the twenty or more sanitary districts into which the state is to be divided.

The Recent Conference on Infant Welfare.—The State Health Department has issued a special bulletin giving a report of the Conference on Infant Welfare held at the State capitol, Albany, June 12. This report is worthy of study by all those interested in the reduction of infant mortality as giving a demonstration of the results that can be attained by properly directed efforts. The suggestions for work in small towns and for prenatal work are especially worthy of study as it is in these directions that the greatest reduction in the death rates in the immediate future may be looked for.

Personal.—Dr. Franklin C. Gram, head of the Bureau of Vital Statistics in the Buffalo Department of Health, has been appointed acting health officer of the city.——Dr. Anna Katherine Daley, Rochester, has been elected supreme medical examiner of the Ladies' Catholic Benevolent Association, vice Dr. Jane W. Carroll, resigned.——Dr. James P. Barr, Buffalo, is said to be seriously ill with an infected wound of the hand.——Dr. L. A. Roth, Elmira, who has been ill for several weeks, is reported to be convalescent.——Dr. Charles D. Kline of Nyack recently sustained a fracture of the wrist while cranking his automobile.——Dr. J. William Giles of Nyack has been appointed health officer of South Nyack under the new state law.——Dr. James S. Ames of Babylon, L. I., Dr. and Mrs. J. W. Bennett of Rochester and Dr. George A. Peck of New Rochelle have sailed for Europe.

New York City

Eye and Ear Institution to Have New Building.—The New York Ophthalmic and Aural Institute, 40 to 46 East Twelfth Street, which was founded by Dr. Herman Knapp in 1869, will move to its new building at Fifty-Seventh Street and Tenth Avenue, October 1. The new hospital is a seven-story building especially constructed for the treatment of diseases of the eye, ear and nose.

Training for Baby Contest.—In order to make baby contests more effective the Chelsea Neighborhood Association announces that there will be baby contests in October and that mothers who wish to exhibit their babies at that time should register at a certain time this month and they will thus have three months in which to train the babies for the contest. It is believed that the process of preparing for a contest will stimulate the mothers to learn more in regard to the care of the baby than the usual methods of conducting contests.

The Death Rate for the Second Quarter.—For the second quarter of this year the death rate has been 14.15 per 1,000, which was a decrease of 1.59 from the average of the past five years. The number of marriages showed a falling off of 228 for the corresponding quarter of last year. The mortality from typhoid fever has diminished 57 per cent. from that of the year 1912, the present year giving promise of showing the lowest mortality from typhoid fever on record. The mortality from tuberculosis was lowered by 208, from measles by 115, from scarlet fever by 115, and from diphtheritic croup by 71.

Off for Europe.—Among those who have sailed recently for Europe are the following: Dr. Charles L. Dana, Dr. and Mrs. William K. Draper, Dr. and Mrs. N. B. Foster, Dr. and Mrs. L. Duncan Bulkley, Dr. Otto H. Schultze, Dr. Eugene Fuller, Dr. and Mrs. J. C. P. Van Loan, Dr. Thomas J. Harris, Dr. A. C. DuPont, Dr. and Mrs. W. P. Simpson, Dr. and Mrs. William B. Coley, Dr. Haven Emerson, Dr. and Mrs. Henry W. Frauenthal, Dr. James T. Gwathmey, Dr. and Mrs. Richard Lewisohn, Dr. James I. Russell, Dr. and Mrs. W. E. Lambert, Dr. E. D. M. Lyon, Dr. James Pedersen, Dr. W. A. Bastedo, Dr. J. McFarlane Winfield, Dr. Margaret A. Cleaves, Dr. and Mrs. A. L. Soresi, Dr. John Warren, Dr. F H. Bosworth and Dr. Isadore Hirsch.

NORTH CAROLINA

Memorial to Dr. Meriwether.—At the meeting of the Buncombe County Medical Society, July 21, a memorial of the late Dr. Frank Tryon Meriwether, Asheville, was ordered to be spread on the minutes of the society.

Personal.—Dr. J. W. Long, Greensboro, has sailed for Europe.——Dr. J. T. Matheson, Charlotte, has returned from Europe.——Dr. W. S. Rankin, secretary of the State Board of Health, has returned from an official trip to Panama.

New Quarters for State Board.—The Council of State has awarded the contract for remodelling the old Supreme Court building, Raleigh, at a cost of $40,000. The entire fourth floor of this building will be turned over to the State Board of Health as its permanent headquarters.

PENNSYLVANIA

Cottages Inspected.—Dr. Samuel G. Dixon, state health commissioner, visited the State Sanatorium, Cresson, July 16, inspected the twenty new cottages and formally accepted them on behalf of the state.

Medical Practice Act Effective.—Governor Tener has signed the new medical practice act which becomes effective at once. It provides for a preliminary education of a year of college work each in physics, chemistry and biology in addition to a standard four-year high school education. It also provides that the candidate for license must have completed at least a year as intern in an approved hospital before he is eligible to take the examination.

Sanatorium Notes.—Director E. R. Walters of the Department of Health and Charities of Pittsburgh has opened bids on the contracts for erecting a tuberculosis sanatorium, improving the municipal hospital and erecting new buildings at the city poor farm. The entire cost of these improvements is to be about $450,000.——Plans have been prepared for a brick and frame two-story building to be erected at Eagleville for the Jewish Sanatorium for Consumptives.

Personal.—Dr. Ralph E. Kell, superintendent of the Insane Hospital at the Chester County Home, Embreeville, has resigned and left the institution August 1.——Dr. A. J. McRae has succeeded Dr. D. C. Wilkins, resigned, as superintendent of the Wilkes-Barre City Hospital.——Dr. Howard H. Bell Harrisburg, has been elected professor of pathology and bacteriology in the University of Alabama.——Dr. D. C. T. Watkins, South Sharon, has retired from practice and returned to his old home in South Wales.——Dr. William C. White, Pittsburgh, has sailed for Europe.

Philadelphia

Personal.—Drs. Clinton DeFoney, Charles T. Russell, Jr. and Lincoln D. Frescolin have been appointed police surgeons of Philadelphia.——Dr. J. C. McCracken left Philadelphia, July 29, to resume his duties at the University Medical School, Canton, China.——Dr. Hubley R. Owen has been reinstated as chief surgeon of the police and fire bureaus.

Baby Contests to be Held.—Better baby contests are to be held in five sections of the city next October under the Child Hygiene Association. Rooms will be taken in these parts of the city and doctors and nurses will be in daily attendance. Every baby entered will be examined by physicians and its mother will be shown where it fails in coming up to the standard. A card will be given to each child registering its weight and during the eight weeks that the contest will last the babies will be under observation. Prizes will be based on the individual improvement.

Children's Open-Air Wards at Hospitals.—Most of the hospitals of the city have made provision for children patients during the hot weather. The Methodist Hospital allows the children under its care to play on the lawns and there are cots there for the very young children. Jefferson Hospital has spent $16,000 for a roof garden. There are three rooms, the sides of which are glass, built on the roof. These glass sides are in the shape of windows and can be opened or closed as the weather demands. Another part of the roof has been screened off, where the children can play. The Presbyterian Hospital has placed cots on the wide porches and convalescent children are sent to the country and seashore. The social service of this hospital sent fifty-seven children to the country several days ago. Mount Sinai Hospital has fitted up a porch, exposed on three sides, where children sleep. University Hospital has fitted up a sun-parlor and the women interested in the Women's Hospital have fitted up a roof garden.

VIRGINIA

To and From Europe.—Dr. Stewart McGuire, Richmond, Dr. Leigh Buckner, Roanoke, and Dr. Gray G. Holladay, Portsmouth, have sailed for Europe.——Dr. and Mrs. Thomas Murrell, Richmond, have returned from abroad.

The Prevention of Malaria.—The first meeting of the Virginia Society for the Study and Prevention of Malaria was held in Norfolk, July 14. Dr. Wilson E. Driver was elected as the chairman of the board of managers, and the temporary officials were made permanent for one year.

State Board Election.—The Virginia State Board of Health met at the Catawba Sanatorium, July 16, Dr. Ennion G. Williams, state commissioner of health, in the chair. The following officers were elected: president, Dr. William M. Smith, Alexandria; vice-president, Dr. Samuel W. Hobson, Newport News, and secretary, Dr. John B. Fisher, Midlothian.

WASHINGTON

Health Department Exhibit.—A reproduction of the exhibit taken of the International Congress of Hygiene and Demography last year has recently been shown in the lecture room of the Bon Marché, Seattle. During the exhibit, lectures were given on the subject of health and sanitation, and pamphlets were distributed.

Personal.—Dr. M. B. Grieve, Spokane, has been elected physician by the high state court of the Independent Order of Foresters.——Dr. William Cass, Vancouver, has been appointed superintendent of the Northern Hospital for the Insane, Sedro-Woolley, vice Dr. A. H. McLeish.——Dr. J. E. Lane, North Yakima, for two years physician of Yakima County, has resigned and will return to his old home in Ansonia, Conn. ——Dr. Wilson Johnston, Spokane, has been elected a vice-president, and Dr. James Sutherland a member of the board of directors of the Washington Association for the Prevention and Relief of Tuberculosis.

WEST VIRGINIA

Personal.—Drs. Chester R. Ogden and D. C. Louchery, Clarksburg, have sailed for Europe.——Dr. Frank LeMoyne Hupp, Wheeling, and daughter have sailed for Europe.——Dr. G. W. Bruce, Moundsville, dean of the medical profession of the Pan Handle, celebrated his eighty-sixth birthday, July 27.

WISCONSIN

New Officers.—Brainard Medical Society at Milwaukee: president, Dr. W. J. Wehle, West Bend.

Health Camp Started.—Winnebago County has established a tuberculosis camp for children in the village of Allenville.

Hospital Fund Grows.—The friends of Mount Sinai Hospital, Milwaukee, have raised $32,000 of the $50,000 required to secure the contingent donation of $50,000 of Abraham Slimmer.

Golden Jubilee of Hospital.—The fiftieth anniversary of the founding of the Milwaukee Hospital was celebrated August 3-4. The capacity of the institution originally was fifteen patients. In memory of the anniversary, a new surgical annex erected at a cost of almost $100,000 has been opened.

Personal.—Dr. F. I. Drake, Madison, has been appointed physician at the State Prison, Waupun, vice Dr. L. Rock Sleyster.——Dr. E. W. Bartlett, Milwaukee, is reported to be critically ill at his home.——Dr. Mazyck P. Ravenel, Madison, has been designated by the secretary of agriculture to report on conditions in meat packing establishments in St. Paul, Indianapolis, Milwaukee and Chicago.——Major Edward C. Barnes, M. C., N. G. Wis., has resigned and has been placed on the retired list.——Dr. Stephen M. Babcock has been made professor emeritus of agricultural chemistry in the University of Wisconsin.

TEXAS

Personal.—Dr. A. J. Caldwell, Corpus Christi, sailed for Europe, July 25.——Dr. P. H. Brown, Temple, is recovering rapidly from his recent illness.

State Appropriations for Tuberculosis.—Items of $98,949 for the State Tuberculosis Sanatorium for the first year and $72,650 for the second year have been added to the appropriation bill by the governor.

Hospital for Hunt County.—A number of physicians of Greenville met July 12 and discussed the proposed county hospital. A committee was selected to present the matter to the county commissioners and to ask for an appropriation of $150,000 for the building and its equipment.

A Jury of Physicians.—For the first time, it is believed, in the history of Texas a jury of six practicing physicians has been impaneled to act on insanity cases. This court is in Dallas and the jury consists of Drs. William Hale, Jr., J. M. Neel, R. J. Gauldin, C. L. Johnson, V. P. Armstrong and J. M. Boyd.

Health Exhibit at State Fair.—Dr. M. M. Carrick, Dallas, announces that he has already arranged for exhibits at the State Fair from the National Association for the Prevention of Mental Diseases, the American Medical Association, the United States Public Health Service and the Chicago Department of Health. There is also to be an extensive exhibit on tuberculosis.

GENERAL

Associate Professor of Surgery Wanted.—Dr. John R. McDill, Manila, P. I., has received information from the University of the Philippines that there is a vacancy in the position of associate professor of surgery in that institution.

Missouri Valley Physicians to Meet.—The twenty-sixth annual meeting of the Medical Society of the Missouri Valley will be held at the Hotel Rome, Omaha, September 18-19, under the presidency of Dr. H. B. Jennings, Council Bluffs, Ia.

English Pathologist to Investigate Pellagra.—The Thompson McFadden Commission has received advice that Dr. Louis Sambon of the London School of Tropical Medicine will visit Spartanburg, S. C., this month to study the pellagra situation.

New Officers.—Sioux Valley Medical Associationn at Sioux Falls, S. Dak.: president, Dr. E. D. Putnam, Sioux Falls; vice-presidents, Drs. Robert Evans, Fort Dodge, Iowa, and J. M. O'Connell, Ponca, Neb.; treasurer, Dr. W. R. Brock, Sheldon, Iowa.

Made Honorary Fellows.—The council of the Royal College of Surgeons of London has elected the following honorary fellows: Drs. Harvey Cushing, Baltimore; J. B. Murphy, Chicago; W. J. Mayo, Rochester, Minn., and George W. Crile, Cleveland.

Change of Meeting Place and Date.—The fourth annual meeting of the American Association for the Study and Prevention of Infant Mortality, which was to have been held in Kansas City, Mo., October 23-25, will be held in Washington, D. C., on November 14-17, under the presidency of Dr. L. Emmett Holt, New York City.

Medical Service for Railway System.—Application has been filed in the circuit court at St. Louis for a pro-forma decree of incorporation for the Missouri, Kansas and Texas Employees' Hospital Association. The purpose of the association is to provide medical and surgical services for employees of this system and to establish hospitals along its lines with headquarters in St. Louis.

Psychic Research Society Organizes.—The American Society for Psycho-Physical Research was organized in San Francisco, recently, with the object of investigating the curious phenomena of a physical nature, yet unclassified by science. Dr. Albert Abrams, San Francisco, was elected president, Dr. W. G. Mizner, San Francisco, a vice-president, and Dr. Patrick O'Donnell, secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Children's Hospital School, Baltimore, $10,000 by Mr. Simon Adler, for the erection of an additional building.

Southern Pacific Hospital Service, a donation of $10,000 from Mrs. E. H. Harriman

Maimonides Hospital, Chicago, an additional donation of $5,000 from Abraham Slimmer, Dubuque, Ia.

St. Barnabas Hospital, New York City, and Home for Incurables, New York City, each $5,000; the Hospital for Women and Children and the Home for Incurable Children, New York City, contingent bequest by the will of Mrs. Clarence C. Hardy.

St. Luke's Hospital, South Bethlehem, Pa., a donation of $35,000 for the erection of a woman's ward and a convalescent ward, by Ekly B. Cox, Jr.

Protestant Episcopal Hospital, Philadelphia, $5,000 for the endowment of a bed by the will of Rev. L. T. Chamberlain.

LONDON LETTER

(From Our Regular Correspondent)

London, July 12, 1913.

Constitutional Reform of the British Medical Association

The failure of the British Medical Association, in its attempt to prevent the working of the National Insurance Act, has given rise to a project of constitutional reform so as to provide a more efficient body in future struggles. The council of the association has endorsed the view put forward by branches of the association to the effect that the representative body, in whom is vested the power of declaring the policy of the association, should cease to be an assembly of delegates bound to vote in a particular way irrespective of the evidence placed before them at the representative meeting. The meetings of the divisions of the association, which appoint the representatives, are usually badly attended, and however small the number present, it can bind the representative to vote in a particular way. Another proposal to secure more effective representation of the views of members is to take a postal vote.

Another Fall in the Birth-Rate: Low Infantile Mortality

The annual summary for 1912 of marriages, births and deaths has just been issued by the registrar general. The population of England and Wales in the middle of 1912 is estimated at 36,539,636 persons, of whom 17,672,985 were males and 18,866,651 were females. The marriages numbered 283,195, a rate of 15.5 per thousand, being an increase of 0.3 on the previous year. The births numbered 872,767, being a rate of 23.8 per thousand, a decrease of 0.6. The deaths numbered 486,967, a rate of 13.3 per thousand. This was 1.3 below the previous year and is the lowest yet recorded. Infantile mortality, measured by the proportion of deaths under one year of age, to births, was 95 per thousand, or 35 less than in 1911. It was 30 per thousand less than the average of the preceding ten years and was the lowest on record.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 18, 1913.

Memorial to Professor Raymond

On June 6 a beautiful bronze medallion of Professor Raymond was installed at the Salpêtrière. He succeeded Charcot and occupied the chair of nervous diseases from 1894 to 1910. Dr. Claude called attention to Professor Raymond's work on Addison's disease, syphilitic muscular atrophy and tuberculous myelitis, to his discovery of the motor nodes of the mixed nerves, the cortical origin of the facial nerve and the cerebral pathway of the hypoglossus. Raymond was, in 1885, one of the first to believe in the syphilitic origin of tabes and general paralysis, a belief now confirmed by laboratory studies, staining of the treponema and biologic reactions.

Temporary Lodgings for Large Families

Senator René Berenger has suggested constructing for homeless families, temporary buildings, somewhat like the barracks frequently erected for soldiers. In these collective homes parents could find lodging for their children and could leave them in competent hands while they went to work. This plan has been very favorably received and the municipal council has just made an appropriation of 200,000 francs for the committee to provide temporary lodgings for large families. Moreover, considerable sums have been received by subscription.

Measures to Combat Depopulation

The Alliance nationale pour l'accroissement de la population française has just been formed with Dr. Jacques Bertillon as president. The aim of this society is to increase the French birth-rate opposing the malthusian propaganda by improving the condition of large families and by trying to overcome poor housing conditions with entire independence of any political or religious discussion.

The Quadricentenary of Andreas Vesalius

Belgium is preparing to celebrate the fourth centenary of the illustrious anatomist, Andreas Vesalius, born at Brussels, in 1514.

Personal

The Académie des Sciences de Bologne has just elected to membership Dr. Gley, professor at the Collège de France.

Dr. Jacques Bertillon, chief of the bureau of municipal statistics of Paris, has just retired.

American Physicians in Paris

About fifty American physicians have undertaken a trip for medical study in France and Germany before attending the approaching International Medical Congress in London. On July 15 they visited many of the hospitals and clinics, the Faculté de médecine, the Académie de médecine, the Museum of Hygiene of the City of Paris and the Institut Pasteur.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 11, 1913.

Annual Meeting of the Organized Profession in Germany

There was no meeting held in 1912, but the Deutscher Aerztetag met this year at Elberfeld, July 3 and 4. About 300 delegates participated, representing more than 24,000 physicians. As usual, on the previous day the general meeting of the Leipsic League (Leipziger Verband) took place. The following data from the business report of the general secretary will give an idea of the extensive activities of the league. The league now has 25,184 members, who are divided into 129 sections with 1,298 official advisers. The correspondence of the league bureau amounted to about 400,000 communications. The department for securing locations provided 3,409 medical positions of all kinds. The information bureau for legal matters was employed to an extraordinary extent. The league correspondence bureau provided the daily press with information regarding the efforts at organization of the medical profession. The insurance department had a satisfactory business and in spite of its short existence showed a considerable surplus. The loan and death bureau has loaned $235,970 (943,881.45 marks) on securities. The amounts obtained from voluntary contributions have amounted since their establishment to $41,567 (165,870.50 marks) which have been distributed to the widows and orphans of physicians. The contracts with the German steamship companies for remuneration of their medical officers have been entirely successful, and the agreement between the imperial postoffice and the league in regard to the basis for the medical services rendered to the Krankenkassen for postal clerks was an important advance. There were no new difficulties of consequence with the legally established Krankenkassen.

The Aerztetag was opened by the new president, Sanitary Councilor Dippe of Leipsic. The director of the medical bureau, Professor Kirchner, was present in person as the representative of the Prussian medical state department. The first address was made by Dr. Streffer of Leipsic on the work of the Krankenkassen committee. The committee was appointed two years ago at the last Aerztetag for the following purposes: The greatest possible extension of the free choice of physicians, the establishment of reconciliation and arbitration courts between physicians and the Krankenkassen and between physicians themselves, control of regulations of contract practice, the exclusion of quacks from insurance practice, the introduction of a sliding scale of fees, compensation for threatened loss of private practice, and the establishment of a central examination bureau for contracts of insurance physicians. The speaker reported the extent to which the commission had succeeded in these individual tasks.

A motion of one of the associations which had already excited a great deal of debate in the medical press between its proponents and opponents came up for discussion. The motion was to the effect that the Aerztetag should require German physicians to demand payment for their services in cases which affect so-called "undertakings for the common good." The determination of the question whether payment for services in certain cases is to be demanded or not is to be reserved to the representatives of the local profession. The author of the motion defended it with the argument that, as a matter of principle, no professional service should be given without pay. For this reason the instructive lectures of physicians and the instruction of the first aid societies and the services to the Red Cross should be paid for. Fortunately the majority of the physicians showed that they do not regard everything from the standpoint of material interests, but look on the medical profession in principle as a humane and ideal one. The motion was lost, although abuses in this direction were recognized. A resolution was passed that the business committee of the Aerztetag should be required to collect data with regard to the payment and position of physicians in such general public welfare work and to prepare for the next Aerztetag definite motions regarding it.

THE VACCINATION QUESTION

In view of the unremitting efforts of the antivaccinationists to abolish compulsory vaccination, the next subject was the vaccination question. The whole question was discussed thoroughly in a statistical manner. Among other things, the misuse of the vaccination question for political purposes was criticized. The following resolution was unanimously adopted:

The imperial vaccination law of April 8, 1874, should be maintained in its complete details on the basis of the experience of nearly forty years, and in view of the continual marked danger from small-pox. The attacks on this beneficent law are entirely unjustified and especially we give an earnest warning to legislators not to heed any demand for the introduction of the so-called "conscience clause."

ACCIDENTS TO MEMBERS OF TRADES UNIONS

The relation of physicians to the so-called "trade unions" was discussed, and particularly the right of the general practitioner to treat the injured as against the medical officials of the trade unions was emphasized.

FOREIGN PHYSICIANS PRACTICING IN GERMANY

The meeting closed with a discussion of the abuses arising from the practice of foreign physicians in Germany. The subject was introduced by a motion by the delegation from Kissingen. The freedom of practice in Germany permits the gradual overwhelming of Germany with foreign, especially Russian, physicians. With the help of agents, the Russian physicians collect the patients from their fatherland, particularly in the German spas, so that the practice of many German spa physicians is notably reduced thereby. For this reason legal assistance was demanded. No definite motion was made, as a legal regulation of the matter would be very difficult. The business committee was instructed to collect material on the question and report on it at the next Aerztetag.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 19, 1913.

Personal

Negotiations are going on just now between the senate of the University of Vienna and the Austrian government on one side, and Professor His on the other side, with the aim of obtaining a successor for Professor von Noorden. It is nearly decided that His will accept the call and that he will begin his lectures here at the beginning of the winter term. Professor Mauthner will temporarily control the Medicochemical Institute of Vienna, which is now made vacant by Professor Ludwig's having reached the age-limit of 71 years. As mentioned in a previous letter, Professor Abderhalden had declined the offer made to him to come over as successor of Ludwig and no definite arrangements have been made in this respect.

Visit of American Doctors to Vienna

A group of American surgeons and physicians, with the ladies of their families, have visited Vienna quite recently on their tour through the medical centers of Europe. Altogether sixty-five doctors, including three women physicians, have taken the opportunity of visiting the various clinics, Steinhof, the great hospital for the insane, and the Baden sulphur baths.

The Problem of Free Choice of Doctors in Hospitals

In this country, the position of the profession is seriously affected by the fact that the admission of patients to the wards of the hospitals as well as to the out-patient departments is not so strictly controlled as, for instance, in England or the United States. Thus it happens that frequently persons well able to pay a moderate fee to the private practitioner save this money by applying to one of the public hospitals. If they become in-patients, they pay no more than a small daily fee of about fifty to seventy cents a day for everything. The private hospitals, sanatoriums, as they are called here, are all very expensive and persons willing to pay for medical attendance, but of limited means, cannot well afford them. Therefore, it was an old desideratum of the practitioners that they be allowed to send to the public hospitals private patients who would be willing to pay a higher price for the accommodation than the ordinary hospital fee, but who would have the privilege of being treated there by their own doctor. Attempts have been made by the profession several times to build a hospital with free choice of doctors for persons of moderate income, but these plans have had to be abandoned. The calculations showed that it would be risky. The government and the municipality have taken up the idea, however, although only partly, and have instituted wards in their new hospitals for the better-class patients who can pay more, but cannot choose their doctor. These half-way measures have annoyed the Vienna practitioners greatly, and the medical organization and the Medical Council of Vienna are contemplating a regular boycott against those institutions which work on the above-mentioned lines. The problem is so complicated, especially by the bureaucratic conditions prevailing in all matters of public health and sanitation, that a sane solution of the riddle is at present hard to find, for our public hospitals—mostly state or municipal hospitals—are strictly forbidden by their statutory regulations to permit any doctor outside of the regular staff to treat patients within their precincts. The bulk of the private patients are not able to pay the high rates charged by the private hospitals, apart from the doctor's fee.

Marriages

Ralph Dumphry Simons, M.D., to Miss Florence T. Hildreth, both of Gardiner, Me., at Dorchester, Boston, July 16.

Harry McCrindell Johnson, M.D., St. Louis, to Mrs. Haymore of Chattanooga, Tenn., at Asheville, N. C., July 16.

Warren Gordon McPherson, M.D., Bement, Ill., to Mrs Rothmeyer of Denison, Tex., at Gainesville, Tex., July 10.

Arthur Bond Cecil, M.D., Los Angeles, Cal., to Miss Mary Wrightson Caulk of Easton, Md., at Baltimore, July 24.

Emil Steinkamp, M.D., Huntingburg, Ind., to Miss Minnie Heichelbech of Haysville, Ind., at Huntingburg, July 15.

Frank Linden Richardson, M.D., to Miss Constance M. Mathey, both of Boston, at Needham, Mass., July 21.

Bert William Hardy, M.D., Miami, Ariz., to Miss Molliere Strickler of Marietta, Pa., at Miami, March 25.

William L. Thompson, M.D., Milwaukee, Wis., to Miss Hazel L. Reeves of Fond du Lac, Wis., July 22.

Robert Columbus Nichols, M.D., Los Angeles, Cal., to Miss Esther Knoll of Des Moines, Ia., June 26.

Creighton Walter Skelton, M.D., to Miss J. Irene Beaman, both of Providence, R. I., June 16.

William Harry Cunningham, M.D., to Miss Emma B. Eckholm, both of Rockford, Ill., July 22.

Roy M. Van Wart, M.D., New Orleans, La., to Miss May Jones of Bramwell, W. Va., August 6.

Wayne P. Hanson, M.D., Cheyenne, Wyo., to Miss Nellie C. Snider of Philadelphia, July 23.

Beveridge Harshaw Moore, M.D., to Miss Amy Thayer Blodgett, both of Chicago, July 22.

Warner H. Carithers, M.D., to Miss Bessie L. McCormack, both of Moscow, Ida., recently.

John Abraham Pratt, M.D., to Mrs. Harriet M. Bigler, both of Aurora, Il., July 21.

Don Vanderhoff, M.D., Battle Creek, Neb., to Miss Eva Wheaton of Omaha, July 3.

Burkert Clark, M.D., Shandon, O., to Miss Anne Frances Hare of Cincinnati, July 24.

Joseph Louis Baer, M.D., to Miss Gretchen W. Shattuck, both of Chicago, July 28.

Deaths

Gregory Doyle, M.D. New York University, New York City, 1865; LL.D., Niagara University, Buffalo, 1898; major and surgeon, N. G. S. N. Y., 1872-90; health officer of Syracuse in 1870 and health commissioner of the same city in 1899; local surgeon of the West Shore System; formerly president of the Syracuse Medical Association and of the United States Pension Examining Board; surgeon to the Syracuse Fire Department, House of Providence and St. Vincent's Orphan Asylum; died at his home in Syracuse, July 23, from heart disease, aged 73.

William Henry Evans, M.D. Bellevue Hospital Medical College, 1867; a fellow of the American Medical Association; of Sedalia, Mo.; assistant surgeon of the Eighth Missouri Volunteer Infantry and Thirteenth Missouri Volunteer Cavalry throughout the Civil War; president of the Missouri State Medical Association in 1895; coroner of Pettis County for several terms; died in the Punton Sanitarium, Kansas City, July 20, from heart disease, aged 73.

Frederick August Leusman, M.D. College of Physicians and Surgeons, Chicago, 1889; a fellow of the American Medical Association and American Academy of Medicine; formerly instructor in genito-urinary diseases in his alma mater and professor of clinical and genito-urinary surgery in Jenner Medical College, Chicago; attending surgeon at the German-American Hospital; died in St. Joseph's Hospital, August 3, from heart disease, aged 60.

Roderick McLennan, M.D. Trinity Medical College, Toronto, 1887; a fellow of the American Medical Association; for twenty-six years a member of the staff of the Quincy (Mass.) City Hospital; died at his home in South Quincy, July 23, from heart disease, aged 53.

Joseph Hooper Glass, M.D. Jefferson Medical College, 1887; a fellow of the American Medical Association; formerly local surgeon of the Pennsylvania System at South Forks, Pa.; later a resident of California and recently a practitioner of Gallitzin; aged 54; was found dead in his office, July 19, from the effects of hemorrhage due to a puncture of the jugular vein, believed to have occurred while he was opening a boil on his neck.

Samuel A. Bell, M.D. University of Medicine and Surgery, Philadelphia, 1864; acting assistant surgeon, U. S. Army during the Civil War; assistant surgeon in the Army from 1865 to 1869; formerly a member of the Medical and Chirurgical Faculty of Maryland; coroner of Baltimore City County and vaccine physician of Baltimore; died at his home in that city, July 23, aged 71.

Simon Peter Wise, M.D. College of Physicians and Surgeons, New York City, 1871; a fellow of the American Medical Association; a member of the staff of the Ohio State Tuberculosis Sanatorium, Mount Vernon; local surgeon for the Baltimore and Ohio and Pennsylvania systems; died suddenly in his office in Millersburg, July 22, from heart disease, aged 64.

Charles McAllister, M.D. Berkshire Medical College, Pittsfield, Mass., 1865; a fellow of the American Medical Association and a member of the Iowa Association of Railway Surgeons; for many years local surgeon at Spencer, Iowa, for the Chicago, Milwaukee and St. Paul Railway; died at his old home in South Lee, Mass., July 21, from cerebral hemorrhage, aged 73.

William B. Pierce, M.D. College of Physicians and Surgeons, New York City, 1861; for three years a surgeon of volunteers during the Civil War; formerly a practitioner of Buffalo and president of the International Ferry Company; died at his summer home at Fort Erie Beach, May 22, from valvular heart disease, aged 78.

John M. McCormick, M.D. Philadelphia College of Medicine and Surgery, 1848; surgeon of the Third Wisconsin Volunteer Infantry during the Civil War and since 1862 a practitioner of Leavenworth, Kan.; died at his apartments in the Planters Hotel in that city, July 17, from senile debility, aged 87.

George Ransom Westbrook, M.D. Long Island College Hospital, Brooklyn, 1878; a member of the Medical Society of the State of New York; of Brooklyn; for many years a member of the staff of St. Mary's Hospital; died suddenly at his summer home in Benson, Vt., July 19, aged 66.

J. V. Hobbs, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1882; for forty years a practitioner of Houston County, Ga.; for one term a member of the Georgia legislature; a director of the First National Bank of Fort Valley; died at his home, July 15, aged 62.

Owen Herbert Evans, M.D. Hahnemann Medical College, Philadelphia, 1893; a retired practitioner of Cheswold, Del.; aged 49; while crossing the tracks of the Delaware Railroad in his automobile, at Evans Crossing, July 20, was struck by a train and instantly killed.

Jefferson Carvosso Fraser, M.D. Bellevue Hospital Medical College, 1875; formerly of Lee, N. Y., but for twenty-five years a resident of Pasadena, Cal.; at one time president of the Pasadena National Bank; died at his home, July 12, from heart disease, aged 63.

William Willson Burkett, M.D. American Medical College, Indianapolis, 1895; formerly lecturer on dermatology in his alma mater; a veteran of the Civil War; of South Bend, Ind.; died in the St. Joseph County Infirmary, July 14, aged 71.

Thomas Louis Mahoney, M.D. Cooper Medical College, San Francisco, 1888; surgeon of the police department of San Francisco; died at his summer home in Sausalito, Cal., from meningitis, following an infection of the ear, July 11, aged 47.

Horatio O. Brink, M.D. Cooper Medical College, San Francisco, 1887; formerly a practitioner of Santa Cruz and later a practitioner of Berkeley, Cal.; died at the Alta Bates Sanitarium, Berkeley, July 19, from angina pectoris, aged 55.

Albert Arthur Newell, M.D. Western Pennsylvania Medical College, Pittsburgh, 1892; of Crafton, Pa.; for fifteen years a practitioner of Moon Run; died at his home, July 5, aged 59.

Edward Cooney, M.D. College of Physicians and Surgeons, Chicago, 1904; formerly of Appleton, Wis.; died at his home in Brooklyn, N. Y., March 12.

Albert Joseph Quinlan, M.D. Toledo (Ohio) Medical College, 1909; died at his home in Cleveland, July 9, from pneumonia, aged 28.

Vincent H. Gaskill, M.D. Berkshire Medical College, Pittsfield, Mass, 1863; for two years a surgeon in the Navy and for fifty years a practitioner of Fayette County, Ohio; died at his home in Pancoastburg, July 11, aged 70.

Elhanan C. Paslay, M.D. Jefferson Medical College, 1858; president of the Williston (Fla.) Bank and for sixty years a resident of Florida; aged 80; was thrown from a horse at Williston July 19, and died from his injuries.

Joseph C. Wunder, M.D. University of Maryland, Baltimore, 1889; the first to introduce diphtheria antitoxin in Baltimore; died at the State Sanatorium for Tuberculosis, Sabillasville, Md., July 20, from tuberculosis, aged 47.

William Wayne Ashhurst, M.D. University of Pennsylvania, Philadelphia, 1890; for sixteen years a practitioner of Chihuahua, Mexico, and later a resident of University, Va.; died in that place, July 14, aged 46.

Samuel Bloom, M.D. Bellevue Hospital Medical College, 1867; for twenty-one years a practitioner of New York City and later of Riverhead, L. I.; died at his home in Baker, Ore., July 18, aged 68.

William F. Carson, M.D. Eclectic Medical Institute, Cincinnati, 1883; of Alliance, O.; died in the Lakeside Hospital, Cleveland, May 8, after an operation for disease of the gallbladder, aged 57.

Leslie R. Quackenbush, M.D. New York University, New York City, 1880; for several years U. S. quarantine officer at Mayport, Fla., died at his home in Remington, Va., July 9, aged 69.

James Ames Osborn, M.D. Hahnemann Medical College, Philadelphia, 1875; formerly an attorney of Washington, D. C; died at his home in Milton, Pa., July 22, from heart disease, aged 72.

Augustus John Kirsten, M.D. Long Island College Hospital, Brooklyn, 1895; a fellow of the American Medical Association; died at his home in Jersey City, July 25, from heart disease, aged 51.

Alva C. Truitt, M.D. Kentucky School of Medicine, Louisville, 1882; of Sterling, Neb.; died at the home of his brother in Shelbyville, Ill., June 18, from locomotor ataxia, aged 55.

George H. Drake, M.D. Detroit College of Medicine, 1893; a member of the Michigan State Medical Society; died at his home in Pontiac, July 9, from disease of the spleen, aged 45.

Benjamin Rush Wilson (license, Florida, 1872); local surgeon for the Florida East Coast Railway; died at his home in Titusville, July 19, from valvular heart disease, aged 75.

Henry G. Eleazer, M.D. Medical College of the State of South Carolina, Charleston, 1885; died at his home in Spring Hill, July 18, from cerebral hemorrhage, aged 52.

Byron Wilson Griffin, M.D. Rush Medical College, 1876; until 1900 a practitioner of Chicago and Illinois; died at his home in North Yakima, Wash., July 12, aged 67.

H. T. Turner (license, Washington, 1899); for several years resident physician at the Washington Veterans' Home, Port Orchard; died in that institution, July 16.

Andrew Little Fulton, M.D. Bellevue Hospital Medical College, 1870; for many years a practitioner of Kansas City, Mo.; died at his home, July 15, aged 70.

John W. White, M.D. Eclectic Medical Institute, Cincinnati, 1889; a practitioner of medicine since 1870; died at his home in Glyndon, Md., July 22, aged 74.

Hiram C. Fisher, M.D. Medical College of Ohio, Cincinnati, 1868; of Metropolis, Ill.; died at the home of his son in Jonesboro, Ark., July 9, aged 75.

John P. Basham, M.D. University of Arkansas, Little Rock, 1883; of Argenta; died in a hospital in Little Rock, July 15, aged 52.

William Hallock White, M.D. University of Michigan, Ann Arbor, 1884; died at his home in Grand Rapids, Mich., June 15, aged 56.

George W. Garrison, M.D. University of Wooster, Cleveland, O., 1866; died at his home in Utica, O., July 12, aged 72.

Annie M. Hawley, M.D. Hahnemann Medical College, Chicago, 1873; died at her home in Big Sandy, Tenn., May 11.

James Sinclair, M.D. Hahnemann Medical College, Chicago, 1884; died at his home in San Luis Obispo, Cal., July 19.

Stetson L. Bacon, M.D. Jefferson Medical College, 1858; died at his home in Port Norris, N. J., June 22, aged 76.

John Francis Graham, M.D. Baltimore Medical College, 1896; died at his home in Marion, Ind., recently, aged 62.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE UNITED DOCTORS

What Has Been Accomplished against This and Similar Concerns—Activity Shown by Courts, Business Men's Organizations and the Newspapers

That organization of counterfeit specialists, the United Doctors, whose methods of preying on and deceiving the sick were exposed in THE JOURNAL, March 1, 1913, is still carrying on its swindling operations in many communities, but we believe that our exposure has already worked much benefit to the public.

Business men's organizations, the courts and legislatures are taking cognizance of the evils of this form of quackery. The legislatures of many states have passed laws to prevent fraud in advertising that will apply particularly to the advertisements of medical quacks.

Business men's organizations, in some instances in connection with public prosecutors, have taken up the investigation of the methods of the United Doctors and other medical advertisers in their respective communities. Among these are the organizations in Wheeling, W. Va., Huntington, W. Va., Trenton, N. J., Johnstown, Pa., Zanesville, Ohio, South Bend, Ind., and Oskaloosa, Iowa.

SOME NEWSPAPER COMMENTS

More newspapers are seeing the light and recognizing the fact that the printing of advertisements that aid in the swindling operations of quack doctors is indefensible. The way a large number of newspapers have commented on our exposure of the United Doctors and similar fraud is both encouraging and pleasing. A few selections may be worth while:

The York (Neb.) *New Teller* recently turned down the advertisement offered by the United Doctors and introduced its comments with this in display type:

"UNITED DOCTORS COMING TO YORK—HERE'S A FREE AD

"LOCAL RETAILERS' ASSOCIATION HAS OPPORTUNITY TO PROTECT PUBLIC FROM GANG OF ORGANIZED GRAFTERS AND PROFESSIONAL RENEGADES

"ARE THE WORST VARIETY OF FAKES, QUACKS AND SWINDLERS—IS THIS PLAIN?

"INVALIDS, USUALLY FROM THE POORER CLASSES, THEIR VICTIMS—NOT A PROFESSIONAL ORGANIZATION BUT A BUSINESS CONCERN—SEPARATING PEOPLE FROM THEIR MONEY ONLY SUCCESSFUL OPERATION."

The editor, in explaining, says:

"'Coming to York, United Doctors, Specialists.' That's the way an announcement received at this office not long ago reads, and considering that they are willing to pay good money to have the fact announced they evidently do not expect to lose by the visit. Fakes is Fakes whatever name they travel under and the United Doctors, Specialists, are of the worst variety because they are willing to extract money from sick people by claiming untold powers in the healing of disease.

"THE JOURNAL of the American Medical Association is a publication intended primarily to interest members of the medical profession and does not have a very wide reading outside the ranks of physicians. Naturally much of the matter contained in its pages is couched in terms which the layman is not conversant with and naturally, too, there is more cheerful literature than descriptions of interesting 'cases.' But every once in a while THE JOURNAL prints things in its columns which everybody can understand and which are decidedly of general interest. In the issue of March 1 there is an article entitled 'The United Doctors, the History and Methods of a Fake Concern of Advertising Quack Specialists.'"

An abstract of the article in THE JOURNAL on the United Doctors then follows and the editor says:

"A few days ago the *New Teller* received an order for advertising which was not accepted. Here is a clause from the matter in question. It seems to indicate that the United Doctors who came to this neck of the woods are at least first cousins of THE JOURNAL's friends."

The Peoria (Ill.) *Star* of March 14, 1913, in an editorial in which it gives an abstract of THE JOURNAL article on the United Doctors, says in regard to "Phenomenal Kraus" who was the predecessor and instructor of Ben W. Kinsey in the quack business:

"It is to be remembered that some years ago a man under this name came to Peoria and started a general cure-all, stating that he was about to build a large hospital for the amelioration of the afflicted."

After giving the substance of THE JOURNAL article the *Star* winds up by saying of the United Doctors:

"The concern seems to be an ordinary advertising company with no more claim to call themselves specialists than any of the other medical frauds and swindlers which impose on the people."

North Dakota is also a state which has been considered good harvest field for the United Doctors and quacks of like kind, and some newspapers in that state appreciate their responsibility in this regard. The Napoleon (N. D.) *Homestead* of March 31, 1913, has the following in regard to the "United Doctors":

"The *Homestead* has repeatedly received advertising matter from this concern for publication at a fair advertising rate but our lack of faith in its claims has caused us speedily to consign same to the waste-basket."

A long abstract of THE JOURNAL article on the United Doctors is then given and the chances are that the United Doctors will give Homestead a wide berth hereafter.

In Jacksonville, Fla., and other cities of that state the "United Specialists" and the "German-American Doctors" have carried on business by methods similar to those of the United Doctors. *Dixie*, a weekly paper with convictions and courage to state them, has waged an unrelenting war on such quack institutions, and through its efforts the licenses of many of these fake "specialists" have been revoked. Among these is George L. Dickerson and five or six members of his staff, who practiced in Jacksonville and other cities under the foregoing names. Dickerson is a notorious quack, formerly of Indiana, where his license was revoked on account of his general quack methods and because he loaned his diploma to his brother, who is not a medical graduate.

The Seattle *Sun*, a daily paper, excludes the advertisements of quacks from its columns and says that newspapers have no more right to permit lying in their advertising columns than they have to print lies in their news and editorial columns, and that newspapers which print quack medicine advertisements know that these advertisements are filled with lies.

An account of the work being done by the *Sun* against concerns similar to the United Doctors is given in THE JOURNAL, June 7, 1913. Prosecutions in the courts by swindled patients, action by the county medical society, the persistent efforts of the *Sun* against them and the intention expressed by the public prosecutor in Seattle to prosecute these swindlers under the recently enacted law in Washington to prevent fraud in advertising have already done much to cripple their activities and will no doubt drive them from Seattle.

The Johnstown (Pa.) *Tribune* does not, if it knows it, accept misleading medical advertising, such as that of the United Doctors, and in the issue of March 6, 1913, during the time the United Doctors and similar institutions were under investigation by the Johnstown Chamber of Commerce, in a long editorial it says, among other things:

"It is our opinion that the so-called 'institute' doctors advertising to catch the chronic invalid, failing to attach names and identities to their advertisements, calling attention to superior equipment, and promising cures, are, as a rule, unworthy of the profession of medicine and not to be entrusted with that confidence which should prevail between doctor and patient. . . . It is utterly without warrant to assert that any combination of doctors, 'institute' doctors or otherwise, have or could have any greater degree of success than the faithful and competent men who answer to the call of the sick and injured, day after day, night after night, during the best years of their lives." The *Tribune* believes that "it has a duty to perform in warning individuals against the persuasive qualities of medical advertising" and "it does believe, and says so, that there are large opportunities for deception in permitting the publication of uncensored advertisements of doctors who withhold their names from their announcements."

ACTION BY LOCAL COURTS

The action of local courts against the United Doctors in various places is illustrated by two instances from Texas.

At Quanah, Tex., G. Schreiber of Kansas City according to the Quanah *Tribune*, was arrested and fined before Judge Bannister for illegal practice of medicine. The *Tribune* says:

> "Schreiber belongs to the celebrated firm of United Doctors. They have been doing considerable advertising hereabouts and claim to be able to cure any and everything. County Attorney Crowder, who tricked this rascal, gives a very good idea of the methods these quacks pursue."

It is then described how the county attorney sent the deputy sheriff, a perfectly healthy young man, to the United Doctors complaining of some slight illness. After a pretended examination Schreiber proceeded to try to frighten the young man into the belief that unless he took a course of Schreiber's treatment, he would soon be in a hopeless condition. The officer excused himself on the plea that he would go and get the money. On his return Schreiber was arrested. Two other doctors with Schreiber succeeded in getting away before warrants could be served on them. The *Tribune* then says:

> "It is said that there are over 200 of these 'specialists' working Texas at present and we hope the example set at Quanah will be followed all over the state and the rascals driven out before they have been able to harm too many people."

At Lockhart, Tex., W. D. Rea and G. W. Bourne, two traveling representatives of the United Doctors, were recently arrested for illegally practicing medicine. After the usual newspaper announcement of "free consultation" and "free treatment, except for the cost of medicines," they arrived in Lockhart, and a healthy man was sent to consult them. They declared that he had diabetes and could not live six months unless treated by them, for which they demanded $45 cash. Complaint was filed by the public prosecutor and on their conviction a jail sentence of one hour and a fine of $50 were imposed. They agreed to leave the state and canceled their arrangements in other cities in which they had advertised their coming. An account of this was printed in the Austin (Tex.) *Statesman*, Feb. 19, 1913.

PROSECUTIONS AT JOHNSTOWN, PA.

According to the Johnstown *Daily Democrat*, May 17, 1913 (following investigation by the Johnstown Chamber of Commerce), "charges of illegal practice of medicine were preferred yesterday afternoon against L. D'Orville Chabut, John E. Byrne and Harold Jackson, doing business here under the name of the United Doctors." Inquiry of the State Bureau of Medical Education and Licensure brought the reply that none of the above-named men was licensed to practice medicine in Pennsylvania. Jackson and Byrne were then arrested, but Chabut, it is said, left Johnstown before the warrant could be served, and a Dr. Kaufman, having a state license, was hurriedly brought to the Johnstown office. At the hearing before the magistrate, conducted by the district attorney, Byrne swore that he was not posing as a doctor, but was only a clerk, and Jackson put up a like defense, that he was the business manager.

In the *Daily Democrat*, May 23, and subsequent issues, Harold Jackson as business manager printed a number of articles (evidently paid advertisements, though not so marked as required by law) in which he attacked the American Medical Association "and its inner workings." He presented the usual twaddle of the League for Medical Freedom as to the American Medical Association being a "doctors' trust," and otherwise showed the most profound ignorance in regard to its organization. One of these articles is signed by our friend of the many aliases, Dr. L. F. Elston, now manager of the office of the United Doctors' office in Trenton, N. J., as "member of the Trenton Chamber of Commerce." Inquiry brought the reply that Elston joined the Trenton Chamber of Commerce as an individual, but it is safe to say that Elston's attempt to use the name of the organization to lend respectability to the methods of the United Doctors will not be relished by the Trenton organization or approved by it.

Concerning the foregoing series of articles by the United Doctors the South Fork *Record* (May 29, 1913), published in South Fork, a small city near Johnstown, has this to say:

> "During the last week the Johnstown papers have given much space to attacks on the American Medical Association or, as they are pleased to call it, 'the Medical Trust,' which have a tendency to mislead the public, or at least make them forget for a time, usually a very short time, their good family doctor. It is said that the 'stuff' referred to has been running as paid advertising, but it has not been marked as such and therefore one cannot be blamed for holding the opinion that it is printed as news or opinions of the various editors. Why they take such a stand is another matter. The charges contained in these articles are too absurd to repeat, except that they intimate that all doctors affiliated with the American Medical Association are banded together to hoodwink suffering humanity. If such were the case this country would be in a bad state."

TROUBLE IN THE UNITED DOCTORS' CAMP AT TRENTON

At Trenton, N. J., according to the Trenton *Times*, the "specialists" of the United Doctors have been having trouble among themselves. Dr. L. F. Elston is the manager. He was formerly at Wheeling, W. Va. Herman Spangler was employed as a "specialist" in the Trenton office. On account of some difficulty with Elston, Spangler left him, opened an office of his own near the office of the United Doctors, and employed the same advertising methods, testimonials, etc. On a warrant sworn out by Elston, Spangler was arrested for stealing certain medicines, bottles, labels and other property from the office of the United Doctors and was also accused of practicing medicine illegally. At the hearing it was brought out and admitted by Spangler that he was a graduate of an alleged osteopathic school in Chicago and had no New Jersey license of any sort. He had removed the word "Osteopath" from his sign and was practicing regular medicine. He was sent to jail, but was later released on bail. Spangler is a specimen of the men employed by the United Doctors, and this incident still further elucidates their methods in swindling the public.

The deeper the inquiry goes into these quacks and their methods, the more sordid is the mess which is disclosed. Lying, cheating, false representation, evasion, the breaking of statute and moral law, false pretense and the robbing of the victim of both his money and, in many instances, his chance for life, make up the sum of the activities of the quack.

TRUAX, GREENE AND COMPANY—AN EXPLANATION

The letter that follows explains itself and in justice to its writer we are pleased to publish it. Truax, Greene & Co. are a corporation, having, we understand, the following officers: Charles B. Munday, president; John K. Fegrave, vice-president; B. H. Coddington, secretary and treasurer.

To the Editor:—My attention has been called to an article which appeared in the Propaganda for Reform department of THE JOURNAL, July 26, 1913, referring to certain advertising methods indulged in by Truax, Greene and Company. In justice to myself I wish to state that being a minority stockholder, and unable, after the death of Dr. F. C. Greene, to control the management of the corporation, and being dissatisfied with the conduct of the same, on Dec. 1, 1911, I withdrew from active management, and disposed of my interests at a great financial sacrifice. CHARLES TRUAX, Chicago.

Correspondence

Von Ruck's Vaccine

To the Editor:—In THE JOURNAL of June 21, page 1936, there appears an article by R. S. Cummings, purporting to show his results in controlling some of my animal experiments, with a conclusion that immunity was not produced by my vaccine, and suggesting the possibility that the treatment had increased the susceptibility of the animals to the acquirement of tuberculosis.

Were it not for the wide circulation of THE JOURNAL, Dr. Cummings' results would receive no notice whatever from me, for the simple and all-sufficient reason that the author has not followed my method and my technic, and indeed persisted in ignoring them, although I had particularly cautioned him against doing so in letters written to him on Aug. 30 and Sept. 3, 1912.

In his letter to me dated Aug. 23, 1912, Dr. Cummings proposed to immunize his animals with a certain number of doses of my vaccine, to be given at certain intervals; and thereafter to infect them, together with a number of controls. In response I cautioned him in my letter of Aug. 30, 1912, stating that if he desired to control my experiments, it would be necessary to follow my method; and in a further letter, dated Sept. 3, 1912, I offered to arrange the experimental procedures, so as to cover all necessary precautions and details, to the end that the eventual publication of his results would be of value. From a standpoint of fairness, it was unconditionally incumbent on him, in reporting his experiments, to mention that, contrary to my insistence on it, he had not followed my method of dosage and had infected his animals without applying the tests that I considered essential in order to know that a sufficient degree of immunity had been induced by the preliminary treatment.

I likewise pointed out to him that these investigations required skill and facilities and I offered him a place in my laboratories, stating that I considered it time wasted to undertake such studies without the proper qualifications. My letter closes with the following paragraph:

"If I can help you in any way, please let me know how I can serve you, but do not assume immunity in animals until you have proved it by complement-fixation tests which should show binding with t. b. emulsions and fats used as antigens."

No further communication was received from Dr. Cummings until the arrival of a letter dated April 24, 1913, when he informed me of his results and requested a reply concerning them. In my answer I asked him for a copy of his protocols, but he has not seen fit to send these to me.

If Dr. Cummings, in spite of my caution and request, proceeded to ignore my methods and my technic and infected his animals after an arbitrary number of doses, assuming immunity on their part without demonstrating this in the manner demanded by me in emphatic language, he should at least have drawn different conclusions from his results than he did. My own conclusions are that he confirmed my experience as given on page 18 of my Laboratory Report 1, of June 1, 1912, where I stated that repeated doses of from 1 mg. to 10 mg. were found necessary during a period of six weeks to produce sufficient protection in guinea-pigs; and that my request to examine for complement fixation with at least the most important antigens, before infecting his animals, was well founded.

I wish to emphasize once more that, to insure the presence of immunity in an experiment animal the same as in the human subject, the respective serums must be tested for complement fixation with the several partial antigens and with tubercle bacilli emulsion, and these serums must also show bacteriolytic power *in vitro*. Further, the respective blood specimens must be taken in the positive phase, that is, at a time of coincidence of the several partial amboceptors, and if necessary the examinations must be repeated on successive days until such coincidence is in evidence, as illustrated in Tables 1, 2 and 3 of my first report. Such lytic serums destroy the virulence of tubercle bacilli *in vitro* and, if demonstrated in the experiment animal, they will afford complete and absolute protection against virulent infection. If, after repeated examination of its serum an animal under treatment shows only partial immunity or none at all, the treatment must be continued and eventually the serum must be reexamined.

Although I am desirous of having my work controlled by competent men, and am ready to afford every possible assistance for such control work, I must insist that the only fair test and the only test likely to give results that are at all of value, is one in which my own mode of procedure is followed implicitly.

KARL VON RUCK, M.D., B.S., Asheville, N. C.

[The preceding letter was shown to Dr. Cummings, whose reply follows:]

To the Editor:—In my article referred to above by Dr. von Ruck, I published exact details of my experiments, and the conclusions that I drew were that the experiments, as I made them, afforded no evidence that immunity was produced, but rather that there was increased susceptibility to infection by reason of the vaccination. I made no claim to having used the complement-fixation test as a criterion of immunity, and those who are interested must decide for themselves whether or not the test is an essential procedure in these immunity experiments. I did not feel—and the staff of the Barlow Sanitarium agreed with me—that the complement-fixation test offered sufficient promise to employ it, and we were not sufficiently impressed by Dr. von Ruck's laboratory tests to be induced to carry them out.

In one of his letters to me Dr. von Ruck makes the following statement:

"With ten successive doses that you have given, we have never yet had an animal that did not show immune bodies, and that did not for a long period outlive the controls."

It will be noted that I vaccinated my guinea-pigs ten times at weekly intervals.

As to the quantity of vaccine used by Dr. von Ruck, he wrote:

"We find that in guinea-pigs the size of the dose makes very little difference. We usually give 0.1 c.c. for the beginning dose, and in some of the animals increase, while in others we continue the same dose, giving the doses a week apart. We find that the animals with increasing doses do not obtain their immunity any sooner than those in which the quantity is not increased, so that the probabilities are that with 1 c.c. you could immunize a guinea-pig."

In my experiments 0.1 c.c. of the vaccine was used for each injection.

I asked Dr. von Ruck how I could obtain his vaccine for the experiments. He kindly referred me to the Bacteriotherapeutic Laboratory, and I bought the vaccine from the laboratory for $1.50 per cubic centimeter. There seems to be no doubt, therefore, that it was the correct product.

As far as I can see, Dr. von Ruck's directions were carried out fully, excepting that I did not test the animals by the complement-fixation test, but Dr. von Ruck says that immune bodies never failed to appear with ten injections of the vaccine. There is no apparent reason, therefore, why my animals did not become immune, when Dr. von Ruck says that his animals became immune so uniformly with the same number or fewer doses of vaccine.

We feel quite satisfied that immunity to infection with tubercle bacilli is not to be gained by vaccination with extracts of the bacilli, and that Dr. von Ruck's vaccines have probably the same value as other tuberculin products.

In conclusion, I would say that this investigation was an independent one, and that I did not feel the need of supervision by Dr. von Ruck in his laboratory, and that if confirmation of his results is forthcoming, the work must come, as in other similar instances, from other laboratories and from independent workers.

R. S. CUMMINGS, M.D., Los Angeles, Cal.

Credit for Discovery of Organism of Parinaud's Conjunctivitis

To the Editor:—In reply to Dr. Verhoeff in the August 2 number of The Journal, I submit a copy of a letter sent me by Dr. Alburger after sending him the slide that Dr. Verhoeff submitted to me:

June 5, 1913.

My Dear Doctor Keiper:—The slide from Dr. Verhoeff presents much the same picture that those prepared by us showed, but it is stained differentially to show the structure of the micro-organisms rather than the general histologic picture. In this section there seem to be a great many more of the fungi than in the areas we studied in your specimen. It is without doubt the same condition and seems to be the same organism. Henry R. Alburger.

Dr. Alburger may be mistaken, but he is a mighty good pathologist. George F. Keiper, M.D., Lafayette, Ind.

Theft of a Microscope

To the Editor:—Some time ago a microscope was stolen from my office and never has been found. It has occurred to me that if The Journal will post the numbers of my microscope and objectives, possibly this may lead to their recovery. They are: Spencer microscope No. 16082. 16 mm. objective No. 37389, 4 mm. objective No. 19435, 1.8 mm. objective No. 35376.

F. B. Nather, M.D., 524 Hutton Bldg., Spokane, Wash.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETERMINATION OF SODIUM BROMID AND SODIUM CHLORID IN THE URINE

To the Editor:—Please give the method of Wyss for the quantitative determination of sodium bromid and sodium chlorid in the urine. See Wyss "Die Pharmakologischen Grundlagen der Bromtherapie bei der gemeinen Epilepsie" in *Deutsch. med. Wchnschr.* Feb. 18, 1913, pp. 345-348.

Johannes Weiss, South Auburn, Neb.

Answer.—Wyss describes a modification of the process of Hondo as follows: 200 c.c. of the well-mixed urine is evaporated to dryness with the addition of sufficient sodium bicarbonate to make it alkaline. The residue is dissolved in water, filtered and the filtrate evaporated to dryness in a nickel crucible. The residue is incinerated and the ash fully extracted with boiling water. The filtrate should be colorless or of a slight yellowish color. If it is not, the evaporation to dryness and incineration should be repeated. The dry residue is dissolved in water and placed in a 100 c.c. cylinder and filled to the mark with distilled water. This solution should be well shaken and 25 c.c. transferred to a large flask; 25 c.c. of distilled water should be added, which serves to wash out the pipet. The liquid should be neutralized with dilute sulphuric acid, 2 to 3 gm. of potassium bichromate are added and 3 c.c. of concentrated sulphuric acid. The bromin evolved is led by a strong current of air into a series of three cylinders of which the first contains 10 per cent., the second 5 per cent. and the third 2 per cent. solution of potassium iodid in distilled water. The iodin set free is titrated with solution of sodium thiosulphate. No chlorin goes over with the bromin. In treating blood or organs by this process, 5 c.c. of concentrated sodium hydroxid solution are added to the sodium carbonate (*Arch. f. exper. Path. u. Pharmakol*, lv, 263).

DISTINCTION BETWEEN HOSPITAL AND SANATORIUM

To the Editor:—Please explain in detail the distinction between "hospital" and "sanitarium." The two are becoming somewhat fused together in the mind of the public, but in reality there should be a difference—at least, there has been a difference.

W. L. B., West Cliffe, Colo.

Answer.—The term "hospital" originally meant a place for exercising hospitality to the poor and sick. Now it means a place for the care and protection of the sick. It is thus a general term which may include several varieties. Thus we speak of hospitals for the insane although their inmates are not sick in the ordinary sense. As ordinarily used the term "hospital" denotes an institution for the care and treatment of the acutely sick or wounded.

"Sanitarium" or "sanatorium" derives its use from the salubrity of the location and from the use of remedies peculiar to the locality. They were primarily founded near springs or in some place that presented climatic advantages. Hence the term is applied to institutions where the natural or physical remedies are especially applied. As these are used chiefly in chronic cases the term "sanatorium" has come to mean chiefly an institution where chronic ailments are treated by non-medicinal and non-surgical remedies. Of course, in the use of these words exact distinctions cannot always be maintained and the sanatorium is often called a private hospital and vice versa. The term "sanatorium" has largely replaced the form "sanitarium" although the latter is preferred by some lexicographers.

ACUTE LYMPHATIC LEUKEMIA

To the Editor:—Please advise me concerning the treatment of a child 9 years old affected by (acute?) lymphatic leukemia. The disease developed slowly, beginning two months ago with paleness, a few ecchymoses and epistaxis, temperature high, organs normal; blood count: white 62,000, red 3,600,000; differential, leukocytes, polymorphonuclear, 3 per cent.; mononuclear, 97 per cent.; hemoglobin, 45 per cent.

Benzol (5 minims every four hours) has been suggested. Please let me have your opinion on use of benzol and some other therapeutic suggestion. R. Ruggieri, Norfolk, Va.

Answer.—The description is undoubtedly that of a case of acute or subacute lymphatic leukemia. Unfortunately all remedies have met failure in combating this pernicious disease. It is, in all probability, an acute infection, and the measure which will best combat the infection is the rational treatment. Both the Roentgen ray and benzol treatments have been of questionable service in this acute type of leukemia. Better results have been reported from the use of arsenic in full doses—Fowler's solution—increasing the dosage one drop a day until the physiologic symptoms are produced and then going back to a small dose and again gradually increasing. Injections of the cacodylate of soda (½ to 1 grain a day) have also been beneficial in some cases. Should the glands become much enlarged and the case become more chronic in character, the use of the Roentgen ray two or three times a week may be tried.

STIMULATING, SEDATIVE AND RELAXING EXPECTORANTS

To the Editor:—Please explain the following terms as applied to expectorants: stimulating, sedative, relaxing. Do these apply to their effect on secretion, cough or circulation? Please name the drugs used to increase secretion, decrease secretion, and to stimulate cough. F. F. A., Michigan.

Answer.—Expectorants may be divided into the sedative or nauseating expectorants which produce relaxation of the bronchial blood-vessels and increase of secretion and the stimulating expectorants which tend to restore tone to dilated blood-vessels. The terms apply to the effect on secretion which is secured by the action on the circulation. The nauseating expectorants include lobelia, tartar emetic, ipecacuanha, potassium citrate, apomorphin hydrochlorid, carbonates, iodids, pilocarpin, ammonium salts, digitalis and squills. The stimulating expectorants include tar, creosote, turpentine, the oils of santal, copaiba, cubebs and eucalyptus, the balsams of Peru and tolu, and atropin and the acids.

CALCIUM LACTATE IN HAY-FEVER AND URTICARIA

To the Editor:—In The Journal of July 12, 1913, page 158, Ref. 164, a "suspension of calcium lactate," which a hay-fever patient has been taking, is spoken of.

1. Why is a "suspension" referred to?
2. How much calcium lactate was contained in each "level teaspoonful"?
3. Would calcium lactate be apt to have any influence in urticaria?

C. A. Kerner, M.D., Racine, Wis.

Answer.—1. Januschke evidently intends giving the salt in powder form, mixing it with enough water so that it can be swallowed.

2. He states that a level teaspoonful holds about 2.5 gm. of calcium lactate, containing about 0.5 gm. of calcium, and that a slightly heaping teaspoonful holds 3.5 gm. of calcium lactate, containing 0.7 gm. of calcium. It is unnecessary to state that this is a rather uncertain method of dosage. Many pharmacologists believe that the calcium salts are absorbed to so slight an extent that they do not produce any appreciable therapeutic results.

3. Calcium lactate is claimed by some to have a decided therapeutic influence in urticaria.

Medical Economics

This Department Embodies the Subjects of Post-Graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

PUBLIC HEALTH LAWS ENACTED DURING THE LEGISLATIVE SESSION OF 1913

During the winter of 1912 and 1913 the legislature was in session in forty-two of the forty-eight states. While the tendency to multiplication of legislation in all directions has been marked for a number of years past, the unusually large number of bills on public health topics introduced in the various legislatures during the past winter can be justly regarded as an evidence of the increasing interest in public health matters. It can also be regarded, however, as an evidence of the sublime faith which the American people, and especially the state legislatures, have in the reforming power of law. Apparently, the accepted belief in most of our state legislatures is that improvement in any condition can be secured by enacting a law on the subject. In no other way can one account for the introduction in the legislatures of the enormous number of bills on public health during the past winter. It is impossible to estimate accurately the number of such bills, but there were certainly over eight hundred, and probably nearer a thousand.

The vast majority of these measures found a resting-place in the pigeonholes of the various committees to which they were referred. This is fortunate, since many of them were hastily and carelessly drafted or were prepared for the promotion of some special scheme or sect rather than for general good. One important lesson which can be learned from careful observation of state legislatures and their work is that a hastily or carelessly drafted bill, even if enacted into a law, is worse than no law at all and that the organized medical profession of the country should set an example of moderation and judicial care in the preparation of such bills as they may endorse. Far too much of our public health legislation is hastily drafted and planned on narrow lines. Fewer laws and more care in their preparation would advance the cause of public health far more rapidly than the present methods.

Space will not permit comment even on all of the bills which become laws. It is desirable, however, to comment on some of the more important. Taking up the new laws by states, Arizona adopted new laws regulating the practice of medicine, surgery and osteopathy, the practice of dentistry and the practice of pharmacy and the sale of poisons.

California, after long and bitter discussion of a few of the thirty-eight bills for the regulation of the practice of medicine and various pseudomedical sects, finally adopted a bill repealing the previous law and attempting to regulate the treatment of the sick on rather novel lines. Two classes of practitioners under two classes of licenses are provided for. The first form of license is unlimited and requires a minimum of 4.800 hours of college work in not less than four years of thirty-two weeks each. The second, or limited, class of practitioners, who are not allowed to use drugs or perform surgery, are required to present only half of the minimum requirements of the first class. This bill is evidently an attempt to reconcile the absurdity of separate boards and standards with the evident desire of the public and the legislators to permit the various pseudoscientific sects to practice their calling.

Colorado adopted a pure-food law and a new law for the control of tuberculosis, a vital subject in that state on account of the number of tuberculous invalids who go there from other states. A marriage law, requiring a physical examination and a health certificate as a prerequisite to a marriage license, was also adopted.

Florida adopted a nurses' registration bill. Idaho amended her food laws and poison laws. Illinois amended the tuberculosis sanitarium act and the trained nurses law. A bill providing for a state epileptic colony was passed and also a hospital bill, giving cities the right of eminent domain for obtaining hospital sites and the right to borrow money on future tax levies in order to raise funds for the erection of hospitals. The state failed to legislate on vital statistic registration. Indiana enacted a number of laws, mainly intended to build up and strengthen the excellent public health organization in that state. The housing law and the law authorizing counties to build tuberculosis hospitals, a law placing the regulation of water supply under the State Board of Health, and the law providing for sanitary school houses are the most important.

Iowa adopted a working men's compensation act, a bill reorganizing the State Board of Health, and an amendment to the Medical Practice Act.

Kansas achieved the unenviable distinction of being the first state to create a separate board of examiners for chiropractors. This state also adopted an osteopathic law, a law legalizing the sterilization of habitual criminals, and laws amending her pharmacy and vital statistic laws.

Maine created a Board of Charities and Corrections, enacted a law regulating the sale of habit-forming drugs, eliminated the word "insane" from the official title of its state hospitals and provided for voluntary commitment of persons suffering from mental disorders.

Massachusetts enacted a number of measures strengthening its pure-food regulations, increasing the powers of the State Board of Health regarding contagious diseases, and authorizing county bacteriologic laboratories. It appropriated $50,000 for a leper hospital and authorized cities and towns to provide meals for schoolchildren. It also appropriated $1,000 to investigate poliomyelitis.

Michigan created a commission for a sanitary survey to obtain definite statistics as to the number of defectives in the state. This commission is to investigate the defectives in the state institutions and elsewhere and report to the legislature in 1915, the report to be a basis for further legislation. The medical practice act was amended by the adoption of a practically new law. Sectarian distinctions have been largely eliminated and all those who desire to treat the sick are required to qualify as practitioners of medicine. A law authorizing the sterilization of habitual criminals and incurable defectives, and a law establishing an epileptic colony, were also adopted. The State Board of Health was given power to prevent ophthalmia neonatorum and was also given jurisdiction over city water supplies throughout the state, whether owned by municipalities or by private corporations. A state commission on hotel sanitation has been created, composed of the state labor commissioner, the pure-food commissioner, the insurance commissioner and the secretary of the State Board of Health.

Missouri has placed all the charitable and state institutions under the Board of Charities and has adopted amendments to the factory inspection laws and laws regulating occupational diseases and the employment of women. Montana has passed a nurses' registration act. Nevada passed an optometry law. New Hampshire has authorized the appointment of physicians to promote the physical welfare of schoolchildren.

The New York legislature adopted the Walker bill to regulate the sale of habit-forming drugs, by the usual restrictions on druggists and physicians. Workshops for tuberculosis convalescents are provided for, also the supervision of the physical condition of schoolchildren by nurses and physicians selected by the board of education. Women compelled to undergo physical examination in obtaining employment are to be examined only by women physicians. The standard of the practice of medicine has been raised. District school boards are authorized to employ physicians for medical school supervision. The sum of $150,000 was appropriated for the destitute blind of New York City who are not inmates of any institution. The most important law passed, however, was the Seeley bill, reorganizing the state department of health. This bill was one of the administration measures of Governor Sulzer. The state department of health is made, for the first time, an actual executive department of the state government and its powers and responsibilities are largely increased.

Oklahoma adopted a law for the registration of nurses, also one requiring a physical examination and a health certificate as a condition of marriage.

Oregon adopted a number of measures, principally amendatory and intended to strengthen the health machinery of the state. A sterilization law was enacted, applying to imbeciles, feeble-minded persons and confirmed criminals. Probably the most conspicuous law adopted in this state was that forbidding the advertising of cures for venereal diseases in newspapers and making the newspaper proprietor or publisher equally liable with the advertiser.

Pennsylvania has required every borough and first-class township to appoint a board of health and to provide funds for its maintenance. The local boards are required to enforce the directions of the state Commissioner of Health and members of local boards failing to do so may be dismissed by the state Commissioner of Health. Laws for the prevention of ophthalmia neonatorum, for the examination of midwives, for the establishment of a village for feeble-minded women and for the increase of the power of the state food commissioner were also adopted. A law forbidding the intermarriage of persons afflicted with certain infectious diseases and requiring a health certificate as a condition for marriage licenses was likewise enacted. Pennsylvania is the first state to respond to the recent agitation regarding the danger of the indiscriminate sale of bichlorid of mercury. A law has been enacted prohibiting its sale under a heavy penalty except on the prescription of a physician.

North Dakota adopted a large number of laws ranging from the disinfection of second-hand furniture to the adoption of a resolution asking Congress to create a national Department of Health. Laws regulating tuberculosis, the sale of diseased meat, the use of snuff, requiring sanitary conveniences at railroad stations, providing for a sanitary survey of tuberculosis in the state, defining the duties of county health officers and providing for the regulation of marriage licenses, were enacted.

North Carolina has extended vital statistic registration through the entire state in a law conforming in general to the model law of the American Medical Association, $8,500 was appropriated for public health work and the employment of whole-time county health officers was authorized.

Rhode Island provided for factory inspection and for the regulation of child labor, forbade the distribution of free samples of medicine, and amended its quarantine laws.

In Tennessee, before the legislature became deadlocked, the model vital statistics bill was enacted.

Texas has forbidden the pollution of streams, has provided for a tuberculosis commission and for a lunacy commission in counties. It also created a state child-welfare bureau, regulated the hours of women in factories and has authorized counties to erect hospitals.

Vermont has adopted a number of amendatory health regulations, the principal one being an act making venereal diseases reportable.

Washington has increased the appropriation of its state board of health and has authorized counties to erect hospitals.

West Virginia has amended its state board of health act, providing for a whole-time state health officer and increasing the power of the board.

Wisconsin has authorized the condemnation of insanitary school-buildings, the employment of visiting nurses by county boards, the holding of an annual conference of local health officers, the requirement of a health certificate for a marriage license, the reporting of ophthalmia neonatorum, the restriction of the sale of habit-forming drugs, and the prohibition of dry-sweeping in public places. It has also passed laws permitting incorporated cities to use money derived from licenses in the prevention of disease, making venereal diseases reportable, providing for a state survey of the character of the water-supply of towns and villages, reorganizing the state board of health and appropriating $40,000 for its work and a law legalizing the sterilization of criminals.

Wyoming amended its pure-food law and adopted a bill regulating the sale of habit-forming drugs.

Medical Education and State Boards of Registration

COMING EXAMINATION

NEBRASKA: Lincoln, August 13-14. Sec., Dr. C. P. Fall, Beatrice.

A Layman's View of Medical Education

The following editorial, headed "For Truth's Sake," appeared in the Fresno (California) *Republican*, May 17, 1913. It is worthy of being reproduced here.

"The announcement of a gift to the University of California which will establish on the Pacific coast an institution for medical research comparable only to the Rockefeller Institute in the East, means a great deal to California and to the science of medicine. Schools for the education of physicians already exist in more than sufficient numbers and are turning out more than enough young physicians to care for its sick. But while there is plenty of medical instruction in the sense of imparting existing knowledge to those who shall apply it in practice, there is a very great deficiency in the endowment of medical research. Physicians who know how to apply existing knowledge are numerous enough, but the knowledge itself has limitations and defects of which no one is more keenly conscious than intelligent and well-educated physicians.

"The sudden realization of this fact is what produced the Rockefeller Institute. Rockefeller's infant grandson had just died of a common infantile complaint. The elder Rockefeller had given *carte blanche* to provide for the child the exclusive attention of the most expert specialists. In spite of this the child died, and when the grieving grandfather attempted to cross-examine the physicians he was astounded to find them ignorant. When they answered that they did not know, he inquired, 'Who does know?' Their answer was, 'Nobody!' 'Why don't they know?' was the next inquiry. 'Because no one has yet gone through the necessary researches to find out,' was the reply. 'Why haven't they done so?' 'Because it costs money and time, and nobody has yet devoted it to this particular subject.' Of course Rockefeller immediately provided the necessary funds, and great progress has since been made. Another such institution on the Pacific Coast should be the precursor of still further discoveries.

"There are three important branches of medical education. First is this research work to find out medical truth. Second is the training of physicians to put this truth in practice. Third is the education of the people to recognize the difference between medical science and medical charlatanry. The last is perhaps the most difficult of all. When the educated physician confesses his ignorance and his helplessness and the uneducated physician proclaims his knowledge and his infallibility, it takes some education on the part of the people to realize that the humility of true knowledge is superior to the arrogance of pretense. Possibly the very existence of an institution for the discovery of medical truth rather than for the training of practitioners, will help also in preparing the minds of the public to accept the truth when known, and to realize that there are no sects or schools of scientific knowledge."

Medicolegal

Requirements to Recovery from County for Services

(Ruan vs. Mahaska County (Ia.), 137 N. W. R. 1003)

The Supreme Court of Iowa affirms a judgment holding that the plaintiff, who was the duly appointed general health physician of the township of Garfield, was not entitled to recover for certain services rendered to a family that was afflicted with diphtheria, because the requirements of the state statute had not been complied with. The court says that the plaintiff was directed by the chairman of the board of trustees of the township to attend the family, which he did, and duly presented his bill for such service to the township trustees, who allowed the same, after which it was presented to the board of supervisors of the county for payment, which refused to allow it. There was no controversy over the amount that such be paid, if the county was liable at all; but at the time of the employment of the plaintiff as stated the township trustees had held no meeting at which it was determined that the family in question should be quarantined, or that it was a proper subject for public assistance, and apparently there never was a quarantine. No written order authorized the plaintiff to furnish such service was issued until after the service had been rendered. The only approval and certification of his bill by the township trustees was by signing their names on the back thereof, accompanied by the oath of the township clerk that the same was just and true and wholly unpaid.

Chapter 156 of the acts of the Thirty-Third General Assembly repealed several sections of the supplement to the Iowa code of 1907, and among other provisions enacted the following: "All bills for supplies furnished and services rendered by order of the mayor or township clerk as herein provided . . . or for persons financially unable to provide for their sustenance and care, shall be allowed and paid for only" on a certain basis therein specified. And then it is provided that "all services and supplies furnished to individuals or families under the provisions of this section must be authorized by the local board of health, or by the mayor or township clerk acting under standing regulations of such local board, and a written order therefor designating the person or persons employed to furnish such service or supplies, issued before said service or supplies were actually furnished, shall be attached to the bill when the same is presented for audit and payment." It is further provided in said chapter: "All bills and expenses incurred in carrying out the provisions of this section . . . shall be filed with the clerk of the local board of health. This board at its next regular meeting or special meeting called for the purpose shall examine and audit the same and, if found correct, approve and certify the same to the county board of supervisors for payment."

It is very evident that the requirement that a written order for the performance of the service, issued before said services are actually furnished, is a mandatory requirement placed in the law for the protection of the public funds. It is a new provision in the law, clearly put there for a purpose. Were the court to construe it as the plaintiff contended it should be construed—that is, that the order may be issued at any time, so long as it is finally filed with the county—the court would have to annul the section by disregarding plain and unambiguous language, and this it has no authority to do. It is a simple requirement which can easily be complied with, if the proper officers pay any attention to the requirements of the law in these cases. No reason was shown why it could not have been complied with in this case, and the court is of the opinion that the trial court correctly held that there was such a disregard of the statute in this respect as to defeat recovery.

Nor was the mere signing of their names by the trustees on the back of the bill a certification of the same to the board of supervisors.

Expert Witnesses Receiving Compensation

(Jacoby vs. Brooklyn, Queens County & Suburban Railroad Co. (N. Y.), 138 N. Y. Supp. 486)

The second Appellate Division of the Supreme Court of New York comments on the fact that all of the witnesses who testified in this personal injury case as to an alleged fracture or partial fracture of the plaintiff's pelvis were in a sense feed retainers of their respective sides, save the family physician of the plaintiff, and he doubtless had either received his professional fee or was in expectation of it, because it says that the criticisms and often hypercriticisms which are leveled at experts—that they are paid witnesses, chosen only after their favorable opinions are ascertained, who testify free from the perils of perjury, secure in opinions which are essentially matters of their special knowledge—could not obtain in this case, or at least were impartially applicable. There is no good reason why an expert whose relations to a case are purely professional, and whose competency exists perforce of his profession, should not be compensated, or why the fact of such compensation should of itself discredit him. So long as the present procedure as to expert witnesses is in force, the criticism on it should not be directed to the individuals who by it alone must be brought to the witness stand.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Urology, New York

July, IX, No. 7, pp. 333-372

1 Ectopia Vesicae. K. Brandl, Deggendorf, Germany.
2 Case of Renal Tuberculosis. G. S. Gordon, Vancouver, B. C.
3 Renal Gonorrhea. C. M. Harpster, Toledo, O.
4 Diagnosis of Vesical Complications in Appendicitis and Other Lesions of Abdominal Viscera. C. Caillet, Amiens, France.

Archives of Internal Medicine, Chicago

July 15, XII, No. 1, pp. 1-116

5 *Pulse Flow in Brachial Artery. A. W. Hewlett and J. G. Van Zwaluwenburg, Ann Arbor, Mich.
6 *Effect of Temporary Occlusion of Renal Circulation on Renal Function. R. Fitz and L. G. Rowntree, Baltimore.
7 *Pathologic Changes in Thyroid in Cretinistic Variety of Chondrodystrophia Fetalis. D. Symmers and G. H. Wallace, New York.
8 Experimental Chronic Nephritis Produced by Combination of Chemical (Uranium Nitrate) and Bacteria (B. Coli Communis). J. P. O'Hare, Boston.
9 Acute Renal Lesions Produced by Uranium Nitrate in Dog in Comparison with Rabbit. J. P. O'Hare, Boston.
10 *Paratyphoid Fever: Serologic Study in Relation to Epidemiology. C. J. Hunt, Harrisburg, Pa.
11 Resistance of Reticulated Erythrocytes. O. H. P. Pepper and M. M. Peet, Philadelphia.
12 Simplified Methods for Quantitative Estimation of Chlorids in Urine. S. Bayne-Jones, Baltimore.
13 Excretion of Indolacetic Acid in Urine. E. L. Ross, Kankakee, Ill.

5. **Pulse Flow in Brachial Artery.**—The authors found that the brachial pulse flow in typical cases of the collapsing pulse of aortic insufficiency is characterized by (1) the large size of the primary wave, (2) by the common occurrence of a rapid black-flow during diastole and (3) by a marked reflection of the primary pulse wave. The large primary wave depends in part on the unusual amount of blood expelled by the left ventricle during systole and in part on the relaxed condition of the arterial tree. The back-flow during diastole is due mainly to the regurgitation into the left ventricle. The back-flow during the latter portion of systole is due to an unusually marked reflection of the large primary pulse wave, produced by an elastic recoil of the peripheral arteries.

6. **Effect of Temporary Occlusion of Renal Circulation on Renal Function.**—According to Fitz and Rowntree in rabbits and dogs with one kidney removed, the circulation of the other kidney may be clamped for as long a time as forty minutes with recovery. If the renal circulation is clamped for a longer time, the animals die with signs of renal insufficiency. In animals with the circulation clamped for not longer than forty minutes, temporary disturbance in renal function is produced as shown by the presence of albumin and casts in the urine, by a diminished phthalein output and by a delayed lactose and iodid excretion. Normal function is regained within six days. Acute or healed pathologic changes are found in kidneys so treated. The acute changes consist of edema, hemorrhage, necrosis and cellular infiltration. The healed changes consist in foci of connective tissue. No progressive lesion is found. Except in the most extreme cases, there is no definite relation demonstrable by the functional tests used between the pathologic and functional disturbances produced. In rabbits with one normal kidney, the circulation of the other kidney may be clamped for at least an hour without permanent injury to the animal's general condition or renal function.

7. **Pathologic Changes in Thyroid.**—There is a form of chondrodystrophia fetalis in which, in addition to changes in the osseous system, Symmers and Wallace feel justified in emphasizing the occurrence of modifications in the soft tissues which are attributable to pathologic defects in the thyroid. The modifications in question consist of thickening of the lips, cheeks and eyelids, the wings of the nostrils and the lobes of the ears, macroglossia, hypertrophic vulva and myxomatous transformation of the subcutaneous and certain deep connective tissues, all of which, when combined with the large head and frog-like expression, the protuberant abdomen, prominent skin folds and pudgy extremities, fulfill the essential requirements for the diagnosis of cretinism. In the latter connection it is to be observed that the chondrodystrophic individual very often bears the so-called "cretinoid physiognomy" without presenting any evidence of cretinism. In these circumstances the large head, depressed nose and dwarfed body, while constituting a superficial resemblance to cretinism are, in reality, the outward expression of a disease which is referable to the bony system and which arises independently of demonstrable changes in the thyroid. To what extent, if any, functional disturbances in the developing thyroid are responsible for the skeletal deformities is an open question. When chondrodystrophia fetalis and cretinism coexist the picture becomes still further involved, and it may not always be apparent to what extent the physiognomy is determined by cretinism and how much of it is due to the chondrodystrophic process acting through premature synostosis of the os tribasilare. In the cretinistic variety of chondrodystrophia fetalis described, the pathologic changes in the thyroid are characterized by an extensive chronic productive inflammatory process eventuating in replacement of the colloid vesicles by means of over-growth of alveolar epithelium, or by invasion and substitution of the alveoli by connective tissue elements derived from the interstitium, aided in both instances by compression exerted from the outside by the contracting fibrous trabeculae.

10. **Paratyphoid Fever.**—During the course of four water-borne epidemics of typhoid studied by Hunt, including 509 cases, 117, or 22.9 per cent., presented atypical features, either during the onset or clinical course. From the feces of eleven patients, in addition to the common inhabitants of the gastro-intestinal tract, there were recovered *B. suicidus*, *B. enteritidis* (Gaertner), three times; *B. acidi lactici*, twice; *B. paradoxus* (Kruse), twice; *B. pseudotyphosus* (Kruse), once; *B. typhosus*, twice; *B. paratyphosus A*, once; *B. paratyphosus B*, once, and *B. cloacae*, once. From the water (in one epidemic) were recovered *B. alcaligenes*, *B. suicidus lectici*, *B. coli communior* and a dysentery organism identified as one described by Rosen in an epidemic of bacillary dysentery at Rotterdam. These studies, Hunt says, indicate that these were unusual and widely varied types, but that each type was specific. The serums, collected at varying periods of from seven to thirty-seven days, studied in dilutions of 1-50 with known organisms for at least one hour, with as many as three studies in several cases, reacted only with the types recorded; hence the specificity of the infecting bacilli as determined by these tests is probably accurate.

Boston Medical and Surgical Journal

July 24, CLXIX, No. 4, pp. 109-143

14 Contributions from Psychopathic Hospital, Boston, Massachusetts. E. E. Southard, Boston.
15 Wassermann Reaction in Its Application to Medicine. W. P. Lucas, Boston.
16 Obstetric Problem of Poor. A. K. Paine, Boston.
17 *End Results of Excision of Knee for Tuberculosis with and without Use of Bone Plates. R. B. Osgood, Boston.

17. **Excision of Knee for Tuberculosis.**—In order to compare the end results of the excision of the knee for tuberculosis in which metal plates or clamps were used to hold the bone ends in close apposition, with the cases of simple excision, Osgood traced the twenty-eight excisions for tuberculosis of the knee-joint done in the orthopedic service of the Massachusetts General Hospital during the last five years. In twelve of these no metals were used to hold the bones in apposition. That is, a simple excision was done, chromic catgut or kangaroo tendon occasionally being used to hold the bones together. In two cases silver wire suture was employed. In fourteen cases aluminum wire clamps or bone plates were used, in eight the aluminum wire clamps devised by Goddu, and in six the malleable iron bone plates suggested by Brackett.

Of the fourteen simple excisions, including the two wired cases, four had a second operation for reexcision, and two of these and one other was subsequently amputated to save life. Three three amputations were in cases either secondarily infected when they entered the hospital, or which became so after leaving the hospital on account of discharging sinuses. Four had sinuses before the operation, and nine after. Pain persisted several months after the operation in five cases. Eventual union occurred in six. The time of union was two months or less in two. The time of union was in three months or more in eleven, and there was no record of eventual union in five. In both the cases in which wire was used it had to be subsequently removed. Of the cases in which bone clamps or plates were used (in eight the clamps, in six the plates), none came to operation for reexcision. There was one amputation done outside the hospital in a case in which a sinus had become secondarily infected after an oil injection, and the wound from an excision done on his second entry apparently later broke down so badly after he left the hospital that a local physician amputated, whether with good cause or not we do not know. Two had sinuses before the operation; five had sinuses after the operation, one from a silk stitch; all are now healed but one. Pain persisted several months after the operation only in the amputated case and as a slight occasional throbbing in a case done four months ago. Eventual union occurred in thirteen. The time of apparent firm union was one month or less in six, two months or less in four, and three months or more in three. In five cases, counting the amputation case as one, the bone clamps or plates gave subsequent trouble, and were removed in four cases, in two of which previous sinuses had existed. Of those whose end result is reported to the present date, nine are said to have had an absolutely perfect result in a comparatively short time, and in all of these bone plates or clamps were used.

The comparative statistics of this series of cases would seem to show that the holding of the nicely approximated bone ends firmly together has definite advantages. The post-operative pain is less, early union is favored, and the only untoward effect noted is the occasional necessity for the removal of the bone clamp or plate. This possible eventuality, Osgood says, seems of little import when compared to the greater assurance of diminished suffering and quicker return of safe and painless weight-bearing.

Georgia Medical Association Journal, Augusta

July, III, No. 3, pp. 73-108

18 Case of "Optic Atrophy, Caused by Uterine Hemorrhage." F. P. Calhoun, Atlanta.
19 Treatment of Trachoma from Surgical Standpoint. J R DeCaradeuc, Savannah.
20 Care of Eyes of Children while Employed Indoors. H. M Lokey, Atlanta.
21 What General Practitioner Should Know about Ophthalmology. C. Stockard, Atlanta.
22 Further Experience with Method for Prevention of Perforation in Submucous Resection. R. M. Nelson, Atlanta.
23 Tonsil and Adenoid Operations. W. C. Kellogg, Augusta.
24 Offending Tonsil. W. C. Lyle, Augusta.

Iowa State Medical Journal, Clinton

July, III, No. 1, pp. 1-72

25 Membranous Pericolitis and Allied Conditions of Ileocecal Region. J. N. Jackson, Kansas City, Mo.
26 Intussusception with Atypical Symptomatology. A. L. Wright and O. C. Morrison, Carroll.
27 Park Hospital. C. F. Starr, Mason City.

Journal of Biological Chemistry, Baltimore

July, XV, No. 1, pp. 1-195

28 *Metabolism after Meat Feeding of Dogs in which Pancreatic External Secretion was Absent. F. G. Benedict and J. H. Pratt, Boston.

29 Influence of Age and Diet on Relative Proportions of Serum Proteins in Rabbits. C. E. Wells, San Francisco.
30 *Toxic Bases in Urine of Parathyroidectomized Dogs. W. F. Koch, Ann Arbor, Mich.
31 Action of Tissues on Hexoses. P. A. Levene ad G. M. Meyer, New York.
32 Chondroitin Sulphuric Acid. P. A. Levene and F. B. La Forge, New York.
33 *Self-Digestion of Thymus. E. K. Marshall, Baltimore.
34 Preparation of Tyrosin. E. K. Marshall, Baltimore.
35 Effect of Changes in Circulation of Liver on Nitrogen Metabolism. S. A. Matthews and E. M. Miller, Chicago.
36 *Fat Absorption. W. R. Bloor, St. Louis.
37 Researches on Purin. C. O. Johns and E. J. Baumann, New Haven, Conn.
38 Interconversion of Amino-Acids, Hydroxy-Acids and Ketonic Aldehydes. H. D. Dakin and H. W. Dudley, New York.
39 Chemistry of Gluconeogenesis: Pyruvic Acid in Intermediary Metabolism of Alanin. A. I. Ringer, Philadelphia.
40 Sphingomyelin. P. A. Levene, New York.
41 Chondroitin Sulphuric Acid. P. A. Levene and F. B. La Forge, New York.
42 Cottonseed-Meal Toxicity. W. A. Withers and J. F. Brewster, Raleigh, N. C.
43 Necessity of Certain Lipins in Diet during Growth. E. V. McCollum and M. Davis, Madison, Wis.
44 Biochemical Relation between Pyruvic Acid and Glucose. H. D. Dakin and N. W. Janney, New York.
45 *Relation of Diets and Castration to Transmissible Tumors of Rats and Mice. J. E. Sweet, E. P. Corson-White and G. J. Saxon, Philadelphia.
46 Cerebronic Acid. P. A. Levene and C. J. West, New York.

28. **Metabolism after Meat Feeding.**—The results of the author's experiments show that there is no large energy transformation incidental to segmentation, peristalsis, glandular activity of stomach, liver and intestine and the movement of the unabsorbed food through the intestinal tract. The attempt to explain the increased metabolism following the ingestion of food by the theory that the increase is a consequence of such movements is, therefore, not justifiable.

30. **Toxic Bases in Urine after Parathyroidectomy.**—Koch's experiments show that digested proteins taken into the body have very toxic effects after parathyroidectomy. These toxic effects are due to products of intestinal and perhaps also products of parenteral digestion. Such products of digestion are normally placed in some cell molecule or stored up in some form. In the case of these animals they are free and act as toxins. In other animals where no feeding occurred the symptoms increased in violence with short intermissions until death. The violence of the symptoms doubtless followed the rate of disintegration of the body protein. This disintegration had perhaps two sources, the preparation of units to supply cells for regeneration (these could no more be used than those received from the food) and the disintegration of the body protein. This disintegration had perhaps two sources, the preparation of units to supply cells for regeneration (these could no more be used than those received from the food) and the disintegration of the famished cells. The pathologic condition would thus appear to be a failure on the part of the cells to build up their protein This part of the metabolism of the cell is regarded as a function of the nucleus. These indications together with the formation of free nuclein elements point to a nucleain atrophy. The histologic findings moreover show an active nuclein degeneration. The extensive coagulation of the blood coming from organs rich in cells and nuclei, indicates the presence of free nucleic acid in the circulation, since nucleic acid coagulates blood plasma in acid solution. The acidity of the blood is indeed indicated by the absence of iron in the erythrocytes of the blood of this region as well as by the presence of a small proportion of erythrocytes that stain intensely in eosin. The parathyroid secretion, therefore, appears to be concerned with anabolic processes closely related with the building of nucleins. When facilities permit, these investigations will be continued.

33. **Self-Digestion of Thymus.**—Marshall concludes that in the self-digestion of the thymus gland, the ferments of the gland are not capable of decomposing all of the nucleic acid within any reasonable length of time, and, moreover, the undecomposed portion of the nucleic acid appears to be identical with that prepared from the fresh gland.

36. **Absorption of Fat-Like Substances.**—The absorption of two classes of fat-like substances, petroleum hydrocarbons and unsaponifiable esters (wool-fat), was investigated by Bloor. None of them was found to be absorbed. The substances as fed were similar to ordinary fats in most of their properties. They emulsified well with dilute alkalies, were soluble in fats and fat solvents and melted below body temperature. They differed from the fats mainly in that they could not be reduced to water-soluble form in the intestine. The slow passage of the fats from the stomach, the abundant provision for hydrolysis and for the absorption of the products of hydrolysis in the intestine and the failure of absorption of fat-like substances which cannot be changed to a water-soluble form, make it extremely probable that fats can be absorbed only in water-soluble form and that saponification is a necessary preliminary to absorption. The significance of this mechanism is little understood but in the light of the above results, one of its uses would appear to be to exclude undesirable fat-like substances which would otherwise be carried in with the fats.

45. **Relation of Nutrition to Transmissible Tumors.**—The authors found that the susceptibility of rats and mice to the transplantable tumors may be influenced both positively and negatively by proper diets. The rate of growth of the transplanted tumors can be positively or negatively influenced by proper diets. Castration of the male renders the animal more receptive to the transplanted tumor and the rate of growth of the tumor is increased.

Kentucky Medical Journal, Bowling Green

July 15, XI, No. 14, pp. 599-632

47 Management of Miscarriage. I. A. Arnold, Louisville.
48 Tetanus. M. Casper, Louisville.
49 Pathogeny of Spastic Rigidity of Childhood. L. Archambault, New York, and L. K. Baldauf, Louisville.

Journal of Nervous and Mental Disease, Lancaster, Pa.

July, XL, No. 7, pp. 425-488

50 *Psychic Action of Mescalin, with Special Reference to Mechanism of Visual Hallucinations. A. Knauer and W. J. M. A. Maloney, New York.
51 Rebounding Pupil. F. R. Fry, St. Louis.
52 *Blood-Vessel Changes Consequent on Nervous Lesions. T W Todd, Cleveland.

50. **Psychic Action of Mescalin.**—The authors' experiences seem to indicate that five levels may be distinguished in passing from purely objective imagery to purely objective realization: First level, the most subjective. The visual image, the visual idea. Second level, the mescalin hallucination, more fantastic, more objective, but still definitely without suggestion of material existence, although largely independent of the personality. Third level, the central after-image. A mechanical copy of an objective impression, emerging out of darkness, without spontaneity. This level seems to be just above that of the mescalin hallucinations. Indeed, the hallucinations very frequently began with a display of central after-images of the wires of an electrical apparatus which they had just used, and only gradually acquired an independent character, a character without relation to the personality as regards content. Fourth level, the peripheral after-image. Totally objective but still not real. Fifth level, the true objective reality. Some idea of the relation of these levels to one another is suggested in the following diagram.

$$\text{Critique}\left\{\begin{array}{l}\text{1. Visual idea.}\\ \text{2. Mescalin hallucination.}\\ \text{3. Central after-image.}\\ \text{4. Peripheral after-image.}\\ \text{5. True objective reality.}\end{array}\right.$$

There exist at present two schools of thought with regard to the hallucinations of the insane. One says that hallucinations are essentially hallucinations, whether they be of very weak, or of very strong imaginative force; the other, that a hallucination is merely a much exaggerated visual idea. Knauer and Maloney give their personal experiences in the matter of these poisonings. All hallucinations, no matter how weak or how strong their imaginative force, no matter how feeble their development, remained indubitable hallucinations, and never sank to be merely ideas, the outcome of a vivid imagination. Whether an idea may become intensified till it merge into an hallucination or not, is only a part of the problem, for hallucinations can involve at least any one of several of the levels which by the action of mescalin the authors have been able to distinguish.

Definite delusions appeared in several of the investigated persons; had for these persons all the elements of reality; were identical with mescalin hallucinations; and owed their reality mainly to the affection of the critique. One of them imagined he saw crawling on the wall an insect, of whose material existence he was so convinced that he proceeded to slay it; he then discovered that the object was nothing more than a stationary nail. Another hearing the pencil scratching on the paper on which one of the authors was recording his hallucinations, thought it was a dog howling, and insisted on the creature being quieted. Thus the critique sometimes disappeared; but in each of these examples, there was some external stimulus—in the one case the nail, and in the other the scratching of the pencil on the paper—which was wrongly interpreted. Whether or not the existence of this external stimulus was a determining factor in the temporary obscuring of the critique the authors are not prepared to say. It is noteworthy that the visual hallucination materialized in a darkened room—that is, under circumstances in which their critique of visual impressions normally is somewhat uncertain.

As regards the auditory delusion, they remark that, as only one sound can be heard at a time, whereas visual hallucinations can be perceived together with ordinary external objects, the auditory critique is so much the more liable to disturbance than the visual. In one instance, however, the hallucinations of muscular sense and of vision were replaced by definite combined delusions. In this person the feeling arose that the body was cut in halves transversely at the waist. Presently he saw the lower half of his body before him, and somewhat to the right side. He became very excited about it, and found that when he moved, the separated part of the body moved with him. He danced vigorously in an effort to restore his former integrity. In this person also other visual delusions occurred. Thus, he saw a French soldier and had to be forcedly restrained from attacking his delusion. It is noteworthy that Knauer and Maloney found no indication of the fundamental importance of sexual experience in the content of their artificial hallucinations and delusions, even when special means were taken to elicit it. In addition to these actions, mescalin produced a most remarkable effect on the appreciation of time. Persons under the influence of mescalin enormously overestimated time periods. Seconds seemed minutes; minutes seemed hours. One of the investigated persons, who had been left half an hour in the dark, thought he had lived through the whole night in this time. They investigated this phenomenon experimentally, and found that the overestimation althoughly largely subjective was still demonstrable objectively. The results of these investigations, together with the details of measurement of the power of perception, the power or reckoning, the power to distinguish, the memory, the simple motor reactions, the weight sense, fixed and free word associations, and the visual acuity for colors, will later be published.

52. **Blood-Vessel Changes and Nervous Lesions.**—That the changes in the wall and lumen of blood-vessels which are occasioned by the occurrence of endarteritis obliterans may be dependent for their production on lesion of the nerve supply of the blood-vessel is maintained by Todd. Such changes in the blood-vessels, he says, are not consequent on, but on the other hand are the exciting cause of, trophic lesions of the skin and deeper tissues. These changes occur in some cases of so-called cervical rib and occasion the vasomotor phenomena included in the symptom-complex of that disease. Interference with the trophic nervous supply of blood-vessels has an important bearing on many questions, such as arteriosclerosis and blood-vessel surgery, and may account for some of the phenomena discussed under these headings.

Maine Medical Association Journal, Portland

July, III, No. 12, pp. 1393-1428

53 Chronic Intestinal Stasis. W. S. Bainbridge, New York.
54 Primary Lues and Dark Field. B. B. Foster, Portland.
55 Relation of Church to Medical Social Service. A. A. Downs, Parifield.

Medical Record, New York

July 26, LXXXIV, No. 4, pp. 139-184

56 Is Appendicitis Ever Catarrhal? F. A. Palmer, Morris, Ill.
57 *Bacteriologic Study of Case of Hemorrhagic Myelomalacia. G. A. Rueck, New York.
58 Relation of Bacterial Metabolism to Certain Foods. A. I. Kendall, Chicago.
59 *Beneficial Effect of Duodenal Alimentation in Cirrhosis of Liver. M. Einhorn, New York.
60 *Diagnosis and Prognosis of Duodenal Ulcer. J. T Pilcher, Brooklyn.
61 Treatment of Persistent Otorrhea in Infants and Young Children by Establishment of Postauricular Drainage. W. C. Phillips, New York.
62 Case of Exploded Urethrascopic Lamp: Removal of Fragments without Operation or Subsequent Symptoms or Sequels V. C. Pedersen, New York.
63 Treatment of Progressive Cases of Pulmonary Tuberculosis. M. E. Lapham, Highlands, N. C.

57. **Hemorrhagic Myelomalacia.**—The organism isolated by Rueck from the cord of a man who died of hemorrhagic myelomalacia is a micrococcus of a morphology similar to that of the *Micrococcus intracellularis* of Weichselbaum, save that under certain conditions it produces bacillary forms. It stains with ordinary dyes and is Gram-negative. It has no demonstrable capsule and form no spores. It grows luxuriantly on all ordinary media whereas the growth of meningococcus of Weichselbaum is often scanty. On glucose-agar its growth is more slimy and vivid than that of *Micrococcus intracellularis* of Weichselbaum. Like the meningococcus it produces no gas, no indol, is aerobic and does not liquefy gelatin. It ferments and coagulates dextrose and galactose blood-serum-litmus-water. The meningococcus of Weichselbaum ferments dextrose and maltose and sometimes levulose without coagulation. It grows at room temperature and has been kept alive in the ice box for one and a half years. The "strain Fraymann" of meningococcus of Weichselbaum grows also at room temperature but lives in the ice box only nine days. In the dry state it was kept alive for eleven days, while the meningococcus lived only five days. Its thermal death point is 64 C. in ten minutes and 60 C. in seventy-five minutes. Flexner states that the meningococcus of Weichselbaum is killed at 60 C. in thirty minutes. It is not agglutinated by a monovalent nor polyvalent antimeningococcus serum, nor by the serum of *Micrococcus catarrhalis* and of *Micrococcus mucosus capsulatus*. It thrives exceedingly well on the cerebrospinal fluid and in the substance of brain and cord, giving rise to an exudative inflammation of the meninges and an acute and very rapid degeneration, and necrosis of the nerve cells and their processes in man and laboratory animals. *Micrococcus intracellularis* of Weichselbaum produces degenerative changes in cord and brain of man and laboratory animals and a fibrinopurulent meningitis in man and monkeys but not in rabbits.

59. **Duodenal Alimentation in Cirrhosis of Liver.**—During duodenal alimentation in six patients the liver became markedly smaller (already after two or three days), assuming a size almost normal. In four patients the result was lasting. In one, however, a few days after the termination of the feeding the liver began to grow larger, while in another patient with pure cirrhosis and dilated heart the size of the liver quickly assumed its original large proportions. The influence of duodenal feeding was in this case very marked but not lasting. Einhorn's experience up to the present time, he believes, justifies him in the conclusion that duodenal alimentation contributes greatly toward diminution of the functional work of the liver. This rest treatment of the latter organ is of benefit whenever it is considerably impaired. The cirrhoses of the liver and allied conditions, accompanied principally by swelling of the hepatic tissues, form a field in which duodenal alimentation may be applied apparently to great advantage.

60. Abstracted in The Journal, May 17, p. 1573.

New York Medical Journal

July 26, XCVIII, No. 4, pp. 157-208

64 Quantitative Amino (NH) Nitrogen Content of Syphilitic and Non-Syphilitic Serums. D. M. Kaplan, New York.
65 Prevention of Death and Resuscitation. A. L. Sorest, New York.
66 Chronic Appendicitis in its Relation to Hyperacidity of Gastric Juice. H. Illoway, New York.
67 Obesity and Emaciation. D. Bovaird, New York.
68 Value of Cauterization by High Frequency Current in Certain Cases of Prostatic Obstruction. A. R. Stevens, New York.
69 Relation of Ellis Island to Public Health. A. C. Reed, New York.
70 Mental Measurement of 400 Juvenile Delinquents by Binet-Simon System. W. G. Eynon, New York.
71 High Pressure Disease. S. R. Roberts, Atlanta, Ga.
72 Antral Empyema, with Presentation of Efficient Conservative Operation for its Cure. H. C. Masland, Philadelphia.
73 Food for Babies. M. A. Asserson, New York.
74 Wounds of Pericardium and Heart. G. G. Holladay, Portsmouth, Va.
75 Acute Mercury Poisoning. J. M. Lobsenz, New York.

New York State Journal of Medicine, New York

July, XIII, No. 7, pp. 355-406

76 Present Status of Cesarean Section. E. P. Davis, Philadelphia.
77 Problem of Caring for Defectives. W. T. Shanahan, Sonyea.
78 Examination of Insane. T. I. Townsend, Binghamton.
79 Prevention of Insanity. C. Waterman, Willard.
80 Massage in Acute and Subacute Stage of Gonorrheal Rheumatism. H. F. Wolf, New York.
81 Some Points of Contact between Ophthalmology and General Medicine. F. W. Marlow, Syracuse.
82 Macular Inflammation. J. J. O'Brien, Schenectady.
83 Nervousness and Dowd Phosphatic Index. R. J. Talbot, Niagara Falls.
84 Blood-Pressure. A. B. Santry, Little Falls.
85 *Clinical Reports of Ten Cases of Pulmonary Tuberculosis in Children Treated with Mixed Bacterins. L. C. Ager, Brooklyn.
86 *Physician and Laboratory. W. B. Stone, Schenectady.
87 Antitoxin in Diphtheria. J. R. Culkin, Rochester.
88 Relation of Infected Stream to Milk Supply of City. F. M. Meader, Syracuse.

85. **Pulmonary Tuberculosis in Children.**—Although many experimenters have claimed to accomplish good results from the use of bacterins in cases of general infection in which there is a true bacteriemia present, Ager believes that such treatment seems to have no logical foundation. The reason advanced for introducing into the circulation the toxins of a disease from which a patient is already suffering is that the reaction to the toxin is largely local and that the active, acquired immunity is also largely local. If, therefore, a general systemic reaction can be produced one shall expect to secure a systemic immunity. In spite of the recent reports of Pettitt and Brown, Ager has been convinced by the investigations of Avery that the secondary organisms are practically never found in the blood of phthisical patients, even in the terminal stages. If that is true, pulmonary tuberculosis is almost entirely a local process and the mixed vaccines ought to be of benefit.

With these facts in view, he treated ten patients in the Brooklyn Home for Consumptives. The ten patients were selected for the following reasons: They had all been in the home long enough to show the extraordinary improvement which removal to proper conditions always produces in children, no matter how advanced the case. They all showed active lesions. They represented different types and different stages of the disease. The bacterial vaccine used was a mixed bacterin, made up as follows: *B. influenzae*, *B. Friedlander*, *M. catarrhalis* and pneumococcus 12,500,000 each; diphtheroids 25,000,000 each; streptococcus 12,500,000 each; *Staphylococcus aureus* 50,000,000. This product was selected because it contained the organisms that Ager had occasionally found in washed specimens of sputum from the home. The first dose in each case was two-fifths of the amount tabulated above. The second dose was three-fifths. The third dose was twice the amount, the fourth was four times, and the fifth and last dose was eight times. The intervals between doses were four days each. This dosage might well be criticized for its rapid increase if any reactions had been observed.

No definite reactions were observed in any case. Two children complained of slight muscular pains after the first injection. A careful study of the four hour rectal temperature charts showed no special changes in any case. In four patients there were slight changes that might be attributed to the treatment. The only positive conclusion drawn by Ager from these cases is that this particular bacterin bears no special relation to these particular cases. It is quite possible that autogenous vaccines might have shown a definite reaction.

Ohio State Medical Journal, Columbus

July, IX, No. 7, pp. 315-366

89 Alcohol Injections into Superior Laryngeal Nerve in Tuberculous Laryngitis. W. Mithoefer, Cincinnati.
90 Complications and Sequelae of Abdominal Surgery. F. F. Lawrence, Columbus.
91 Nourishment of Infants. C. S. Ordway, Toledo.
92 Case of Septic Thrombosis of Both Ophthalmic Veins and Cavernous Sinuses. J. R. Mossgrove, Steubenville.
93 Treatment of Syphilis. H. A. Baldwin, Columbus.
94 Relation of Proctology to Urology. G. B. Evans, Dayton.

Texas State Journal of Medicine, Fort Worth

July, IX, No. 3, pp. 89-122

95 *Peripheral Neuritis in Amazon Valley. C. Lovelace, Waco.
96 Unwritten Chapter in Gynecology, Uterine and Adnexal Syphilis. I. C. Chase, Fort Worth.
97 *Heredity as Factor Promoting Resistance to Tuberculosis. B. Cornick, San Angelo.
98 Colon Disharmony. R. S. Loving, Dallas.
99 Part Doctors Have Taken in Construction of Panama Canal. W. C. Gorgas, Panama Canal Zone.
100 Berlin's Attitude toward Friedman and His Serum. E. L. Gilcreest, Gainesville.

95. **Peripheral Neuritis in Amazon Valley.**—Recently Lovelace analyzed 963 cases of peripheral neuritis treated in a railway hospital in North Brazil. His conclusions were, (1) that a peripheral neuritis attended by high mortality prevailed in North Brazil, (2) that this neuritis was a clinical entity which must be classified as beriberi or as a member of an as yet hypothetic beriberi group, (3) that this disease bore no intimate relation to the consumption of rice as a staple article of diet, (4) that it was not due to the absence of any food principle in the diet of those whom it attacked. That this disease was not intimately associated with a rice diet and that it was not due to the absence of any of the recognized food elements, were conclusions unavoidable in the face of facts pertaining to the incidence of the affection. That is to say, it attacked persons who had previously eaten no rice whatever, a larger number of persons who had eaten it only occasionally and a great number of persons in whose diet rice could not be considered the staple factor. It was not confined to the laborers, but prevailed among the employees of the higher grade whose diet was varied and abundant. In addition, there was both a place and a seasonal variation in its occurrence.

There were two types of the disease: First, the cardiovascular type—in which circulatory symptoms predominated, and, second, the paralytic type—in which paralysis of various muscle groups, with areas of perverted sensation, was the characteristic feature. Very naturally the majority of cases presented both sets of symptoms: there was tachycardia, perhaps arhythmia and reduplication of the second sound over the pulmonic area; perhaps some dyspnea; edema particularly over the shins; the deep reflexes were usually exaggerated but frequently lost; areas of anesthesia, hyperesthesia or paresthsia were frequently present; motor paralyses showing a predilection for the extensors of the leg and forearm, although any muscle group was liable to be affected, were present.

There was a group of fulminant cases—*beriberi galopante*, in the vernacular—in which the whole course of the disease from the very first symptoms to the final flutter of the dilated heart, might occupy less than one week; and there was the group of paralyzed wretches, bedridden for months or years, whose best hope lay in the merciful intervention of some kindly intercurrent malady like lobar pneumonia or bacillary dysentery. There was also a very remarkable group characterized by the rapid onset of a more or less complete paraplegia. The mortality was from 15 per cent. to 20 per cent. and anatomically there was atrophy of the skeletal muscles, dilatation and hypertrophy of the heart and effusions into the serous cavities, particularly the pericardium. Frequently the whole cadaver was waterlogged.

97. **Heredity Promoting Resistance to Tuberculosis.**—Cornick concludes that to account logically for the demonstrated fact, as shown by Struempel and others, that 80 to 90 per cent. of mankind in Western Europe at least, acquire at some early period in life a tuberculous infection which remains localized and becomes quiescent before death occurs from some other disease, we must postulate the existence of a racial immunity, slowly built up after ages of infection and resistance in each successive generation. Racial immunity, or racial resistance, is the sum of the resistance of the individuals and families of the race. With the inadequate sanitary precautions at present almost universally prevailing, every child occupying the living-rooms of a tuberculous parent and breathing their germ-laden atmosphere every day, if not every hour, must necessarily become infected, unless endowed with absolute immunity to tuberculosis—a condition which, according to the present state of our knowledge, does not exist. With the ever present opportunity for acquiring, under these cirumtsances, a "massive" infection, the only tenable explanation of the fact that any such child can survive the period of childhood must be on the ground of exceptional resisting power transmitted to it by heredity from a tuberculosis parentage. The only alternative hypothesis is that a slight infection, with a very few tubercle bacilli, repeated from time to time, at just the right theoretical intervals, might produce a protective immunization of the child if not later subjected to a "massive" infection. But this explanation, which has much to commend it, and which is accepted by Professor Metchnikoff, would, if it were the all-sufficient and correct one, hold true also among the North American Indians and negroes, as well as among Caucasians. Clinical observations among these races shows, however, almost no resistance where the chances of infection are equal.

United States Naval Medical Bulletin, Washington, D. C.

July, VII, No. 3, pp. 321-487

101 *Weak Foot. R. C. Holcomb, U. S. Navy.
102 New Theory of Ventilation and Its Application in Certain Situations Aboard Ships. F. L. Pleadwell, U. S. Navy.
103 Aural Affections Dependent on Visceral Lesions and Functional Nervous Disorders. J. J. Richardson, U. S. Navy.
104 Detection of Feebleminded Applicant for Enlistment-Value of Binet-Simon Scale as Diagnostic Aid. A. R. Schier, U. S. Navy.
105 Lost Trails, Plea for Naval Medical Biographies. J. D. Gatewood, U. S. Navy.
106 Absorbable Animal Ligatures. T. A. Berryhill, U. S. Navy.
107 Model Camp Hospital Ashore. E. Thompson, U. S. Navy.
108 Advantages of Paris from Medical Postgraduate Point of View. R. A. Bachmann, U. S. Navy.
109 Estimation of Total Nitrogen. E. R. Noyes, U. S. Navy.

101. **Weak Foot.**—Holcomb comments on what in service experience has been of benefit to make a workingman out of a cripple. He says that soaks, strapping, bandaging and rest have all been tried for the relief of the painful symptoms, and their value for temporary relief needs no comment. Metal arches have been unsuccessful in all cases reported. Unless a plaster cast is made of the foot in a position of adduction and a steel arch made to conform to the proper contour, as recommended by Whitman, the measure is more apt to increase the pain than to afford relief. Not one man on whom they were tried appears to have been benefited to the extent that his disability did not finally disable him from service. Operative measures directed toward the bones and ligaments, Holcomb says, do no more than to make a cripple a little less of a cripple, rather than to make him fit for service. Exercise and the teaching of men the proper way to develop their feet seem to afford the most promising results. These exercises should be undertaken in the incipiency of the weakness. The development of the plantar muscles, the tibialis posticus and anticus and the group of muscles that give spring to the foot, the avoidance of keeping the foot in a prolonged attitude of pronation and rest should be insisted on. The prolonged standing with the relaxed muscles throws all the strain on the ligamentous structures, when the burden should be shared by the muscles. Tiptoe exercises with the feet in voluntary adduction are the type of exercises to develop the muscles most concerned in giving strength to the inner arch; raising the full height of the long arm of the inner longitudinal arch and then easing slowly down to the outer arch which exercises the transverse arch of the two feet. The development of a proper leverage walk is of great value, and here we must look to adaptability of the shoe for the foot.

Washington Medical Annals, Washington, D. C.

July, XII, No. 4, pp. 201-253

110 High-Frequency Currents. F. B. Bishop, Washington, D. C.
111 San Martin Y Satrustegui's Operation for Gangrene. G. T. Vaughan, Washington, D. C.
112 Case of Hydrophobia. P. S. Roy and H. J. Nichols, U. S. Army.
113 Tabes with Unusual Distribution of Deep Pain Loss. T. A. Williams, Washington, D. C.
114 Syphilis among School Children. H. H. Hazen, Washington, D. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Australasian Medical Gazette, Sydney

May 31, XXXIII, No. 22, pp. 507-536

1 Specimens Illustrating Intracranial Disease. C. T. C. de Crespigny.
2 Reduction of Typhoid in Australasia. J. S. Purdy.

June 7, No. 23, pp. 537-564

3 National Insurance Act. R. H. Marten.
4 Recurring Fibroma of Nasopharynx. W. N. Robertson.
5 Epitheliosis Desquamativa and Trachoma. A. Leber.

June 14, No. 24, pp. 565-586

6 Gastroptosis. F. A. Hadley.
7 Death from Intravenous Injection of Salvarsan (Hemorrhagic Encephalitis). T. G. Fleming.
8 Emotions and Their Relation to Mind. G. H. Taylor.

British Medical Journal, London

July 12, II, No. 2741, pp. 57-108

9 Cancer of Colon. S. White.
10 *Carcinoma of Prostate. R. J. Willan.
11 Surgical Milestones. R. C. Brown.
12 Defects of Insurance Act and Their Remedy. W. Stanger.
13 Acute Endocarditis Following Gonorrhea. A. W. Gill.
14 Spontaneous Reduction of Dislocation of Cervical Vertebrae. W. C. Bentall.
15 Local Anesthesia. H. S. Souttar.
16 Dilatation of Fallopian Tubes for Sterility. T. H. Lewis.

10. **Carcinoma of Prostate.**—The average duration between the onset of symptoms and the patient seeing a surgeon was fourteen and a half months in the thirty-three cases analyzed by Willan. The average age was 61. The onset symptom was increased nocturnal frequency of micturition in 40 per cent., and gradual obstruction to urination in 30 per cent. of the cases. Pain was variable, and not characteristic. Urinary obstruction was a marked feature; 72 per cent. had complete retention, and a further 24 per cent. partial retention. Hematuria was not common; probably 82 per cent. were without bleeding. On rectal examination 70 per cent. showed hard nodules, with fixity of the gland. The average duration of the disease from onset of symptoms to death was twenty-eight months. Young's statistics that 21 per cent. of removed prostates show a malignant tendency cannot be ignored. If these figures are accepted, it is a surgeon's duty to remove the gland by operation immediately it begins to cause symptoms. The risks of the operation then are smaller than the risks should malignancy supervene. Treatment recommended when a diagnosis of carcinoma has been made: (a) in the absence of residual urine, give a urinary antiseptic, with opium for the pain when necessary; (b) if there is residual urine, begin catheter life, using a large-sized hard catheter; give a urinary antiseptic, with opium if necessary; (c) if there is obstruction, or, if catheter life is intolerable, establish a permanent suprapubic drainage.

Brain, London

May, XXXV, No. 4, pp. 259-330

17 •Endogenous Fibers of Human Spinal Cord (from Examination of Acute Poliomyelitis). F. E. Batten and G. Holmes.
18 •Pathology of Chronic Progressive Chorea. J. A. F. Pfeiffer.
19 •Case of Landry's Paralysis with Special Reference to Anatomic Changes. J. A. F. Pfeiffer.
20 Ductless Glands and Nervous System. T. R. Elliott.

17. **Endogenous Fibers of Human Spinal Cord.**—The spinal portion of the spinal accessory nerve, according to Batten and Holmes, has a large intramedullary root which extends throughout the upper five or six cervical segments of the spinal cord. The longer descending systems of the dorsal columns—Schultze's comma tract, Hoche's marginal bundle, Flechsig's oval field, and Gombault and Philippe's triangle—do not contain endogenous fibers in man. The propriospinal fibers of the ventrolateral columns are arranged in man as in other mammals, and conform in their arrangement to the law that the longer fibers lie nearer the surface of the cord. Many fibers of the long ventrolateral columns ascend to the brain-stem and terminate in the inferior olives, in the formatio reticularis bulbae et pontis, in the nucleus centralis inferior, and probably in the nuclei laterales of the medulla; others ascend in the dorsal longitudinal bundles as high as the midbrain.

18. **Pathology of Chronic Progressive Chorea.**—The pathology of chronic degenerative chorea, Pfeiffer says, consists not only in a degenerative process in the nervous elements of the cortex, but of the thalamus and corpus striatum.

19. **Case of Landry's Paralysis.**—The changes in the peripheral nerves on microscopic examination made by Pfeiffer are most interesting, and emphasize the importance of an examination of the peripheral nerves in all cases of acute spreading paralysis, as it seems most probable that the pathology of this condition *per se* is to be looked for in the peripheral nervous system. In the case studied by Pfeifler the pathologic findings are those of an interstitial neuritis, affecting the nerve roots and peripheral nerve stems. It is also interesting to notice that in spite of the existence of this interstitial neuritis, no sensory symptoms or pain on pressure occurred. The motor cells were well preserved through the central nervous system, and the cellular changes which were present could hardly be regarded as having any direct relation to the paralysis, as such cellular alterations are frequently found in other conditions not associated with acute spreading paralysis.

Clinical Journal, London

July 2, XLII, No. 13, pp. 193-208

21 Cases Illustrating Certain Urinary Conditions in Women Associated with Frequent or Painful Micturition. D. Newman.
22 Alimentary Intoxication. E. M. Corner.

July 9, No. 14, pp. 209-224

23 Conditions Simulating Prostatic Hypertrophy. C. Wallace.
24 Color-Vision and Color-Blindness and Methods of Testing. C. D. Marshall.
25 Traumatic Pancreatic Pseudocyst. T. G. Moorhead and R. A. Stoney.

Journal of Tropical Medicine and Hygiene, London

July 1, XVI, No. 13, pp. 193-208

26 Ankylostoma Infection in Udi District of Central Province, Southern Nigeria. E. J. Wyler.
27 Ankylostomiasis in North Nyasa District. P. C. Conran.
28 Identity of Infantile and Donovan's Leishmania (Kala-Azar). U. Gabbi.

Lancet, London

July 12, II, No 4689, pp. 63-124

29 Toxemias of Pregnancy and Eugenics from Obstetric Standpoint. A. Routh.
30 Esophagoscopy, Laryngoscopy and Bronchoscopy, as Aid in Detection of Disease and Removal of Foreign Bodies Impacted in Food and Air Passages. W. Milligan.
31 •Process of Digestion Illustrated by Action of Stains on Living Tissues. E. E. Goldmann.
32 •Blood and Cerebrospinal Fluid in Mumps. A. Feiling.
33 Operation and After-Treatment of Fistula in Ano. P. L. Mummery.
34 Graphic Records of Respiratory Paralysis. G. A. Sutherland.
35 Routine Method of Examination in Gonorrhea in Male as Guide to Treatment. F. H. Pickin.
36 Elimination of Errors in Roentgenoscopy of Urinary Calculus. E. W. H. Shenton.

31. **Digestion Shown by Staining Living Tissues.**—From Goldmann's researches it is evident that the process of digestion coincides with a cellular reaction which takes place in the connective tissue of the mucous membrane, a reaction having for its principal feature an immense concourse of two kinds of cells, phagocytes capable of being stained during life and acidophil cells. In certain circumstances he found a precisely similar reaction in the animal body under the most varied conditions. If, for example, a rat is purposely infected with trichinosis, masses of pyrrol cells and acidophil cells are found in the tissues surrounding the trichinous deposit and even in the trichinous capsules. In a prepared specimen of carcinosis of the peritoneum of the mouse the carcinomatous nodules lying in the mesentery are dark blue, whereas the intestine is almost quite free from these cells. The carcinoma has therefore diverted the pyrrol cells from the intestine and drawn them to itself. This cellular reaction is very similar to and perhaps identical with the one which Schlecht, Schittenhelm and their co-workers have recently brought about by the parenteral administration to an animal of albumin derived from a different source and by anaphylaxis both in the blood and also locally. All these various conditions have a basis in common, namely, that the organism resists the entrance not only of foreign bodies, but also of blood or cells from foreign sources, and when they have entered it may endeavor to convert them, respectively, into a part of its own fabric or into its own blood and cells.

32. **Blood and Cerebrospinal Fluid in Mumps.**—From the results of his observations Feiling thinks the following conclusions are justified: (1) That the blood in mumps shows definite changes in the corpuscular content; (2) that these changes consist (a) in a slight increase in the total number of leukocytes, and (b) in a lymphocytosis which is both relative and absolute; (3) that this lymphocytosis is present on the first day of the disease and persists for at least fourteen days; (4) that the occurrence of orchitis does not invariably alter the blood-picture, and (5) that the changes in the blood are of distinct diagnostic value in differentiating mumps from other inflammatory swellings of the parotid or submaxillary salivary glands and from cases of lymphadenitis. In one case of mumps, a clinical picture strongly suggestive of meningitis is presented, and the clinical diagnosis is supported by the examination of the cerebrospinal fluid. The two together constitute a fairly complete proof of the existence of an inflammatory lesion of the meninges of the brain and spinal cord which undoubtedly followed mumps and for which no other cause could be found.

From this case and from the accounts of the other quoted cases the following conclusions are drawn: (1) That a lymphocytosis of the cerebrospinal fluid occurs in mumps, when that disease is complicated by meningitis or by lesions affecting the cranial nerves; and (2) that a lymphocytosis has been found in cases of mumps which have presented no clear clinical symptoms of any organic lesion of the nervous system. Finally, from a consideration of the changes found in the blood and cerebrospinal fluid, we are, Feiling thinks, justified in assuming that the virus of mumps excites an inflammatory reaction in the body whose characteristic feature is a great aggregation of lymphocytes.

Medical Press and Circular, London

July 2, XCVI, No. 3869, pp. 1-24

37 •Absence of Abdominal Respiratory Movement as Indication of Pericarditis. W. E. Wynter.
38 Intestinal Angulations and Kinks Associated with Stasis. W. I. de C. Wheeler.
39 Guiding Principle in Therapeutics. J. Snowman.
40 Breast Feeding of Infants. E. G. A. Webb.

July 9, No. 3870, pp. 25-52

41 Surgical Treatment of Epilepsy. O. Kukula.
42 Pathology and Treatment of Hallux Valgus. A. S. B. Bankart.
43 Foot-and-Mouth Disease in Man—Aphthous Fever. C. M. O'Brien.
44 Tuberculous Meningitis in Adults. G. A. Crace-Calvert.

37. **Absence of Abdominal Respiratory Movement in Pericarditis.**—Where loss of abdominal respiratory movement was well marked, in the absence of more obvious thoracic and abdominal lesions, Wynter says, in four cases the pericarditis was associated with chorea in children. Two were admitted with this complaint, and evidence of pericarditis either in to-and-fro friction or cantering rhythm with loss of abdominal movement. Another, admitted with rheumatism and mitral regurgitation, developed chorea, and at the same time loss of abdominal movement was noted and pericarditis recognized by well-marked friction at the base of the heart. When readmitted for recurrence of chorea three months later the pericardium was found to be adherent. The fourth case, admitted with chorea, later developed pericarditis and effusion.

Practitioner, London

July, XCI, No. 1, pp. 1-156

45 *Phlebitis. D. Duckworth.
46 Cancer of Breast. J. H. Evans.
47 *Cystic Mammary Tumors. H. Upcott.
48 *Inoperable Cancer and Radium. A. A. Warden.
49 Arterial Spasm. O. K. Williamson.
50 Difficulties of Diagnosis in Disease in Children. J. Porter-Parkinson.
51 *Cyclic Vomiting in Children. H. T. Ashby.
52 *Treatment of Infantile Diarrhea by Saline Injections. H. B. Day.
53 Some Surgical Diseases of Abdomen in Children. J. H. P. B. Barrett.
54 *"Tunnel" and "Caterpillar" Skin Grafting. A. Maclennan.
55 Case of Rat-Bite Disease. R. T. Hewlett and G. H. Rodman.
56 Orthopedic Surgery. A. H. Tubby.
57 *Picric Acid and Camphor Treatment of Ringworm. A. Savill.
58 Results of Vaccine Treatment in Upward of 400 Cases of Acute and Chronic Infective Disease. A. Ross.
59 Combined Psycho-Electrical Treatment of Neurasthenia and Allied Neuroses. E. L. Ash.
60 Colloids in Medicine and Physiology. L. Dimond.
61 Importance to Life of Mineral Substances in Our Foodstuffs. J. Oliver.
62 Atypical Case of Pneumonia. (Afebrile.) L. A. P. Burt.

45. **Phlebitis.**—*The treatment of patients with phlebitis,* Duckworth says, is both regiminal and medicinal. Posture is of the first importance, and rest of the involved part is essential. If a leg is the seat of the process it must be laid out horizontally, the knee slightly flexed and the foot everted. A pillow under the knee supporting and slightly raising the ankle secures rest. One part of belladonna liniment to four of warm water should be applied on lint well soaked and loosely bandaged over the vein. This is to be covered with oiled silk and lightly bandaged. This is all that is required locally. An aperient of calomel, colocynth and henbane pill should be given overnight, and a dose of any saline powder or water taken the following morning. It will be advisable to repeat this saline dose several mornings in the week. Potassium or sodium citrate and lithium citrate with compound tincture of bark in an ounce of sarsaparilla decoction, taken twice in the day, is a useful medicine. The diet is very important. It must consist chiefly of fish, eggs and light pudding. Well-cooked green vegetables are advisable, fresh tender lettuce and cooked fruit, apples by preference. Strong coffee should be avoided; weak tea or a little whisky may be given if the circulation is feeble. Freshly made lemonade may be taken. Milk is to be avoided and for a good reason. Milk is rich in lime and may certainly tend to promote clotting. Whey is a safe liquid to employ. Extra drinking of water, distilled if possible, is very advisable. Milk is inadvisable in all cases of viscosity of the blood. Care must be taken at first on assuming the erect position; no sudden movements should be made. Bending the knee of one limb in getting into bed has proved fatal in several cases by causing rupture of a clot and embolism of the pulmonary artery. The patient should sit on the bed and have the legs raised by an attendant. The affected limb should be bandaged carefully for some weeks. It may sometimes remain permanently enlarged and more clumsy than the sound one. At a later period, warm douching and gentle massage may be employed. Massage should be avoided till the circulation is reestablished.

47. **Cystic Mammary Tumors.**—Upcott states that the treatment of cystic tumors of the breast involves operation without delay. It is not enough that the mention of a tumor in the breast should raise the thought of malignancy; in every case of a woman over 30 prompt and radical treatment should be instituted unless the possibility of malignancy is excluded.

48. **Inoperable Cancer and Radium.**—Warden is convinced that radium has established a claim to be tried, not only in apparently hopeless cases, but in those in which gland infection and cachexia have not yet reduced the patient's chance to a minimum.

51. **Cyclic Vomiting in Children.**—On the theory that the liver is at fault, and that there is an absence or non-usage of the carbohydrates, Ashby gives sugar in large quantities during an attack, and, if possible, before an attack comes on. The best way to give it, he says, is as glucose in soda water, giving an ounce of glucose every two hours by the mouth, if possible. The children get very thirsty during an attack, and are only too eager for drinks; of course, a good deal is vomited back again, but if a drink of the glucose and soda water is given soon after an attack of vomiting, some of it will be absorbed before the next attack of vomiting comes on. The glucose should also be given per rectum in large quantities. Ashby is quite certain that this materially shortens an attack and makes it less severe. If the parents can tell when an attack is coming on, the glucose should be given at once, and so help to ward it off, or at least to shorten it. The bowels should be kept freely moving with enemas, and if the child during an attack is getting worn out by the continual vomiting and retching, a small injection of morphin often helps to diminish the vomiting and to give some rest.

52. **Infantile Diarrhea.**—Saline injections alone, without drugs, Day holds, are capable of curing most cases of infantile diarrhea. He believes that marine plasma has no definite superiority over artificial saline of the same strength. Such hypertonic solutions are preferable to weaker (75 per cent. or less). The administration of medicine is preferable to injections of saline as a routine treatment of infantile diarrhea. Disregard of dietary instructions is the commonest cause of failure of outpatient treatment. Injections are valuable in proportion as the loss of fluid—by vomiting and diarrhea—exceeds the intake. They should be given before actual symptoms of collapse arise.

54. **Skin-Grafting.**—In 1912 Maclennan described a new method of skin-grafting which he designated "tunnel" grafting, and which, he says, has given him most excellent results. Another new plan for skin-grafting, which he has employed, he has designated "caterpillar" grafting, on account of the skin graft being made to crawl on to the ulcer. It consists in cutting a long strip of skin running up to, but not entering, the ulcer. The top end is pointed and is detached. The flap is then doubled on itself and a single stitch retains it in its new position. The raw surface left behind is closed by a continuous stitch. The flap should be broad, not less than 1 inch, and should not be too long, not more than 5 inches. After the pointed end has acquired a firm hold in its new bed, the other end is cut into the ulcer and the caterpillar is straightened out, the fold then being formed of the granulations and part of the bed of the ulcer. After the graft has acquired a hold, the elevated part of the ulcer, carrying the former blood-supply of the caterpillar graft, is cut away; thus, a long sound strip of the entire skin is planted across or well into the ulcer. The flap should be stitched to the cut edge of the granulation tissue in the ulcer, but the edges should be drawn together by mattress sutures passing below the graft, so as to avoid interference with the blood-supply of the new strip of skin. This method of grafting is not regarded as of such general utility as the tunnel method, but it is suitable in some cases.

57. **Ringworm.**—The lotion used by Savill consisted of picric acid 7 grains, camphor ½ ounce and rectified spirit ½ ounce, as advanced by Williams.

Annales de Gynécologie et d'Obstétrique, Paris

June, XL, No. 6, pp. 321-384

63 *Destructive Mole. (Etude de la mole disséquante ou pénétrante.) Curtis and Oui.
64 Congenital Cystic Tumors of the Uterus; Two Cases. Vautrin.
65 Ileus and Operative Treatment Not Interfering with Seven-Months Pregnancy. Lévy-Klotz, B. Cunéo and A. Pinard.

63. **Dissecting Mole.**—Those interested in this subject will here find the literature to date well presented with tabulated details of the twenty-two principal cases on record of destructive hydatidiform, dissecting or penetrating mole. Curtis and Oui report further the minute details of the case of a woman of 50 with this form of mole at her fifth pregnancy, with an illustrated description of the minutest histologic details. The syncytial masses around the villi ceased abruptly on the farther side of the fibrinous wall shutting in the elements of the mole. They were unable to find a trace of syncytium even in the veins around, and this they regard as the main difference between mole and malignant chorio-epithelioma.

Annales de l'Institut Pasteur, Paris

May, XXVII, No. 5, pp. 341-420

66 Research on Coagulation of the Blood. (Sur la nature du cytozyme.) J. Bordet and L. Delange.
67 Ricin Intoxication in the Guinea-Pig. Nicolle and E. Cesari.
68 Hydrolysis of Saccharose with Different Acids in Presence of Koji's Sucrase. G. Bertrand and Rosenblatt.
69 Ninth and Tenth Annual Antimalaria Campaigns in Algiers, 1910-1911. E. and E. Sergent.
70 Research on Development of Aspergillus Niger. A. Kiesel.

Archives des Maladies du Cœur, Etc., Paris

July, VI, No. 7, pp. 433-496

71 Congenital Heart Disease. (Considérations cliniques et physiologiques à propos de 5 cas de maladie congénitale du cœur droit étudiés graphiquement.) C. Laubry and C. Pezzi.
72 Pathologic Anatomy of Ankylostomiasis and Hemolytic Jaundice. J. Parisot and C. Fairise.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

June, II, No. 6, pp. 529-608

73 Postoperative Menstrual Blood-Cyst. G. de Rouville and Arrivat.
74 Treatment of Puerperal Eclampsia with Morphin. J. Rouvier.
75 Abdomen Presentation. (Présentation du tronc—mode du ventre.) J. Henrotay.

Bulletin de l'Académie de Médecine, Paris

June 24, LXXVII, No. 24, pp. 597-614

76 Theoretical Explanation of the Findings with the Filament Galvanometer in Heart Disease. A. Lesage and E. Mosny.

Bulletins de la Société de Pédiatrie, Paris

July, No. 7, Supplementary No., pp. 281-336

77 *Infant Wards in Hospitals. (Améliorations à apporter au fonctionnement des crèches d'hôpital.) H. Triboulet.

77. **Infants' Wards in Hospitals.**—This number of the *Bulletins* is a fifty-five-page pamphlet containing the suggestions for improving conditions in the infants' wards of hospitals as presented and discussed at recent meetings of the Société de Pédiatrie of Paris. They are printed in this form for general distribution. A copy of the pamphlet is to be sent to all authorities in charge of the French hospitals and others interested. (The secretary of the society is M. Apert, 14 rue de Marignan, Paris.) Some of the suggestions were summarized in The Journal, May 10, 1913, p. 1498.

Journal de Médecine de Bordeaux

June 29, XLIII, No. 26, pp. 413-428

78 Restriction to Water Diet in Treatment of Adults. (La diète hydrique chez l'adulte.) A. Guerin.

July 6, No. 27, pp. 429-444

79 The Diminishing Birth-Rate. (La crise de la dépopulation. Théories néo-malthusiennes et avortement.) P. Balard.
80 Traumatic Meningocele in Infants; 3 Cases. H. L. Rocher.

Presse Médicale, Paris

June 28, XXI, No. 53, pp. 525-536

81 *Study of Achondroplasia. (Interprétation des variétés morphologiques basée sur l'ontogenèse.) Bertolotti.
82 *Roentgenoscopy of the Liver. (Hépatoptose et rayons x.) M. Letulle.
83 Congenital Permanent Cyanosis; 3 Cases. G. Heuyer.

July 2, No. 54, pp. 537-552

84 The Leukocyte Reactions. C. Richet.
85 Pseudarthrosis of the Fibula. A. Broca.
86 Conservation of Plant Elements. (La stabilisation des végétaux. Ses conséquences—son avenir.) A. Goris.

July 5, No. 55, pp. 553-564

87 Pulmonary Lesions from Infection of Umbilicus. (Le poumon ombilical.) E. Bonnaire and G. Durante.
88 Tuberculosis and Pregnancy. E. Sergent.

81. **Achondroplasia.**—Bertolotti discusses the mechanism of the various forms of this type of dwarf growth, with eighteen illustrations.

82. **Roentgenoscopy of Unusually Low Liver.**—Letulle gives a dozen illustrations showing how the Roentgen rays have differentiated a congenital anomaly in the liver which has hitherto been classed with hepatoptosis but which in reality is nothing of the kind. The trouble is a complex malformation of the liver and adjoining parts of the intestine.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

June, XXI, No. 6, pp. 161-188

89 The Transverse Suprapubic Incision in Gynecology. Rouffart and Potvin.
90 Arrest of Uncontrollable Vomiting of Pregnancy after Direct Transfusion of Blood from a Pregnant Woman. A. Vlannay.

Semaine Médicale, Paris

July 2, XXXIII, No. 27, pp. 313-324

91 *Hemolytic Splenomegaly. (Splénomégalie hémolytique anhémopoïétique; le rôle de la rate dans l'hémolyse.) G. Banti.

91. **Anemia from Hemolysis.**—Banti devotes thirty columns to the report of his experimental research and clinical experience on hemolytic affections. His conclusion is that the agents of hemolysis can be divided into two great classes, the first being those which act directly and practically exclusively on the red corpuscles in the blood-stream with no appreciable active cooperation on the part of the organism. Distilled water belongs to this class. The other class of hemolytic agents act directly on the reds but have also the power of stimulating the hemolytic organs to an excessive destruction of blood-corpuscles. To this class belong serums, phenylhydrazin, etc. The organs on which this class act are the spleen most of all, and then to a far less extent on the liver, the lymph-nodes and the bone marrow. The spleen is above all the most sensitive and the most active in hemolysis. In clinical hemolytic splenomegaly four factors are at work: the agent causing hemolysis; the excessive hyperactivity in hemolysis of the spleen; the anemia (the consequence of the excessive hemolysis), and the (occasional) jaundice—also the consequence of the excessive hemolysis. If the hemolygenic agents are sufficiently potent to induce excessive hemolysis also in the secondary hemolytic organs, either splenectomy would be useless or it would induce merely simple improvement, transient or permanent. When not so potent, splenectomy removes the principal instrument at work in the hemolytic process, its hyperfunctioning being revealed by its enlargement and by the anemia resulting from the excessive hemolysis. The splenectomy does not remove the unknown primary hemolygenic agents, but it deprives them of their powerful ally, the spleen. They are then unable to do harm, and the splenectomy would thus be clinically equivalent to a complete cure. This conception of the mechanism of hemolysis throws light on other forms of anemia. It seems probable that certain forms of progressive pernicious anemia are due to some abnormal process of excessive hemolysis of splenic origin. If this proves true, it might be possible to arrest the progressive anemia by removal of the spleen, and thus bring the patient back to health. Banti reports in detail his research on dogs and rabbits and in three splenectomized subjects to determine the resisting powers of the corpuscles before and after splenectomy; also the hemoglobinemia in the general blood-stream and in the splenic vein; the progress of hemolysis and of the anemia in animals with normal spleens under the influence of various hemolytic substances; the same in the splenectomized; the hemolytic action of extracts of spleen,

and the morphologic changes in the size of organs in animals with and without a spleen under the influence of various hemolytic substances.

Berliner klinische Wochenschrift

June 30, L, No. 26, pp. 1193-1240

92 Classification of Disturbances in Speech. (Versuch einer synoptischen Gliederung der Sprachstörungen auf der Grundlage ihrer klinischen Symptome.) H. Gutzmann.
93 *Influence of Calcium Salts on Constitution and Health. R. Emmerich and O. Loew.
94 Dietetics in Cardiovascular Disease. H. Vaquez. Concluded in No. 27.
95 Alleged Reduction of Epinephrin-like Substances in the Serum in Psoriasis. R. Fischel and P. Parma.
96 Syphilis and Fever. F. Glaser.

93. **Influence of the Calcium Salts on Constitution and Health.**—Emmerich and Loew report extensive experimental research and clinical experiences based thereon which, they think, indicate that an adequate intake of calcium is one of the most important factors in the hygiene of the race. Other writers recently have confirmed the beneficial effects of calcium chlorid taken systematically over long periods. They regard the crystallized salt as more liable to be chemically pure, and order it dissolved in five parts distilled water, a teaspoonful of the mixture to be taken with each meal, diluted a little. (Thus, 0.5 gm. dry calcium chlorid three times a day.) Emmerich and Loew advise healthy persons to take this daily, as so much of our food is poor in calcium while in other foods there is a harmful excess of magnesia over calcium. In disease, especially when there is a loss of calcium in the urine, it may be better to give calcium lactate and, to increase the alkalinity of the blood, sodium tartrate with it. They order a mixture of equal parts and give 8 or 10 gm. daily, fractioned in three doses. In their experimental research mice thrived for months on daily doses of calcium chlorid twenty times larger than those proposed for human beings, and rabbits on doses a hundred times larger. As the human organism may be more sensitive than that of the lower animals, they accept as the limit clinical dose 0.04 gm. per kilogram. They report numbers of concrete instances in which patients gained in vitality and energy after taking calcium chlorid. The reports include cases of improvement in the general health and increase in weight in the course of from four to six weeks in northerners residing for a few months in the tropics. L. Reinhardt writes that the calcium chlorid given in this way, even to children, often had a wonderful effect. Especially with neurasthenia, nervous irritability and depression it seemed to transform the persons taking it, adding zest to life and work.

Deutsches Archiv für klinische Medizin, Leipsic

CXI, Nos. 1-2, pp. 1-204. Last indexed July 5, p. 70

97 Involvement of Spinal Cord in Variola. (Ueber Erkrankungen des Rückenmarkes bei Menschenpocken.) H. Eichhorst.
98 Case of Pneumopericardium. M. Ljungdahl.
99 Calcium Oxid in the Urine; Calcaruria. (Zur Lehre des Kalkstoffwechsels. III.) N. Voorhoeve.
100 The Secretion of the Pancreas in Man. O. Holsti.
101 Soda Edema. (Ueber Oedeme durch Natrium bicarbonicum.) H. v. Wyss.
102 The Cholesterin Content of the Blood in Internal Diseases. E. Henes (New York).
103 Analysis of Irregular Pulse. (Zur Analyse des unregelmässigen Pulses.) P. Reckzeh.
104 The Diastatic Ferment of the Urine. W. Neumann.
105 Estimation of Digesting Power of Gastric Juice as Aid in Diagnosis of Organic Stomach Disease. (Wert der Berechnung der peptischen Kraft des Magensaftes für die Diagnose der organischen Magenkrankheiten.) C. Singer.
106 Roentgenoscopy of Heart and Large Vessels. (Die röntgenanatomische Situsuntersuchung des Herzens und der grossen Gefässe. Zweck, Bedeutung und seitherige Leistungen dieses Verfahrens.) F. M. Groedel.

Deutsche medizinische Wochenschrift, Berlin

June 26, XXXIX, No. 26, pp. 1233-1288

107 *Radiotherapy of Cancer. (Behandlung des Krebses mit Röntgenlicht und Mesothorium.) B. Krönig and K. Gauss.
108 Living Spirochetes in the Brain in General Paralysis. (Nachweis von lebenden Spirochäten im Gehirn von Paralytikern.) E. Forster and E. Tomaszewski.
109 *Improved Bile Technic for Detection of Diphtheria Bacilli. (Verfahren zum Nachweis der Diphtheriebazillen und seine praktische Bedeutung.) W. v. Drigalski and Bierast.
110 Roentgenoscopy of Gastric Motor Functioning. (Einfluss von Zwischenmahlzeiten bei der röntgenologischen Prüfung der Magenmotilität.) M. Lüdin.
111 *Air Embolism. (Arterielle Luftembolie.) F. Jessen.
112 *Technic for Artificial Pneumothorax. (Technik des künstlichen Pneumothorax.) F. Jessen.
113 Motor Aphasia as only Indirect Consequence of Traumatic Injury of the Skull. M. Többen.
114 Another Case of Complete Recovery from Cancer of the Uterus after Exploratory Curetting. P. Prym.
115 Varicella in Adults Diagnosed as Syphilis; Six Cases. L. Lilienthal.
116 Alleged New Infection with Syphilis after Salvarsan Treatment Merely a Superinfection. C. Stern.
117 Tincture of Iodin in Sterilization of the Skin. (Kritische Bemerkungen über den Wert der Grossichschen Methode und ein Beitrag zur Vereinfachung unserer Desinfektionsmethoden.) W. Merkens.
118 The Science of Infant Feeding. (Zur Technik der Ernährung und Ernährungstherapie im Säuglingsalter.) S. Engel.

107. **Radiotherapy of Cancer.**—Krönig and Gauss describe their technic—the Freiburg method as it is called—with which radiotherapy seems to have entered on a new era, and the results as they have applied the new method in 146 cancer cases. The main points of difference from the old technic are the use of the pure gamma rays, carefully filtered through aluminum 3 mm. thick; great increase of the dosage to obtain summation of relatively small single deep doses by the cross-fire method, the tube not over 20 cm. distant; determination of the optimal time limit, and certain precautionary measures to ward off local injury. As the method has only recently been worked out, the longest period of freedom from recurrence to date is sixteen months. They compare the primary operative mortality and the absolute success as reported from a number of large clinics with cancer in fourteen different localizations, the composite figures showing that the outcome of surgical measures in some of them is far from encouraging even at the best. With cancer of the breast, for instance, the operative mortality is 4 per cent., the absolute cures only 18 per cent.; with cancer of the vagina, the operative mortality is 30 per cent.; absolute cures 4 per cent. On these figures they base their advice to apply radiotherapy even when the cancer can be readily excised. This is not a loss of precious time as was formerly maintained; it has frequently rendered inoperable cancer operable, and it is logical to assume that conditions in the operable cases will be improved in proportion. They make a practice of applying the radiotherapy by their new intensive dosage technic for one to three weeks to cancers accessible to sight and touch; if this does not succeed in curing the cancer, the operation can follow at once and is still early enough. If the cancer is operable but not accessible to inspection by touch and sight, the radical operation can be done at once if the statistics show that in the location in question cancer offers a favorable percentage of cures. If this is not the case, radiotherapy may be applied even then. If the cancer is inoperable, the intensive radiotherapy should be applied without delay, supplemented by other methods of treatment. After the operation they insist that in every case there should be systematic prophylactic radiotherapy. This alone seems to ward off recurrence, especially in cases in which the cancer has healed under the exposures alone. Unless this is done systematically as a routine procedure, radiotherapy is liable to be followed by the same disappointing results as are recorded for surgical measures.

109. **Improved Technic for Diagnosis of Diphtheria.**—Drigalski and Bierast state that the diphtheria bacilli can be shown up much better and with greater precision if a little beef bile is added to the Loeffler grape sugar-bouillon serum. The proportion is 0.87 parts grape sugar-bouillon and 0.13 parts sterilized beef gall to 3 parts beef serum. These proportions can be obtained most readily with 600 c.c. beef serum; 174 gm. grape sugar-bouillon and 26 c.c. beef gall. In comparative tests of this and the ordinary Loeffler plate, positive findings were obtained in eighty-one cases with both and in seventeen cases with the bile plate alone.

111-112. **Air Embolism and the Technic for Pneumothorax.**—Jessen reports an experience which confirms Brauer's statement that embolism may occur from air getting into a pulmonary vein without coming directly from the exterior. It is immaterial whether the embolism is caused by oxygen, nitrogen or air, and it is probable that certain cases published as pleural epilepsy were in fact cases of air embolism. Jessen's patient was a man of 30 requiring resection of the ribs over a cavity in the lung. An anesthetic was injected for local anesthesia and the tip of the syringe must have injured some vessel in or near the cavity. The vessel must have lost its elasticity and been unable to slide out of the way; no fluid had been injected but the air in the cavity of the lung entered the injured vein, with fatal collapse. Zink has reported a similar case, nitrogen from an artificial pneumothorax getting into a vessel in the chest wall. Sundberg also reported last December three cases of gas embolism of the same kind. All this experience testifies anew, Jessen declares, to the importance of preferring a smooth incision rather than the puncture technic for artificial pneumothorax.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, CXXII, Nos. 5-6, pp. 359-596

119 *Histologic Findings in Gastric Mucosa with Gastric Ulcer and Cancer. H. Heyrovsky.
120 *Improved Technic for Testing Stomach Functioning. (Zur funktionellen Diagnostik der Magenkrankheiten mittels der Methode nach Sahli.) J. Znojemsky.
121 *Plaster Dressing and Extension Clamps in Ambulatory Treatment of Fractures. (Die ambulante Behandlung von Knochenbrüchen mit Gipsverbanden und Distraktionsklammern.) P. T. L. Hackenbruch.
122 *Congenital Defect of the Fibula. (Zur Therapie des kongenitalen Fibuladefektes, zugleich ein Beitrag zur Kenntniss der Epiphysenoperationen.) F. A. Hesse.
123 *Restoration of Vagina. (Ueber plastischen Ersatz der Vagina bei angeborenem Defekt derselben.) P. Albrecht.
124 Suture of Ruptured Inferior Vena Cava. (Ruptur der Vena cava inferior durch Ueberfahrung. Naht der Vene.) V. Schmieden.

119. **Changes in the Gastric Mucosa with Ulcer and Cancer.**—Heyrovsky has made a careful histologic examination of the gastric mucosa in the operative cases of stomach trouble in Hochenegg's service, and states that histologic findings are of great practical value, both for prognosis and as a guide for the diet after an operation on the stomach. He found evidences of gastritis in 51.5 per cent. of the cases of gastric ulcer; in 42.9 per cent. of the cases of duodenal ulcer; in 66.6 per cent. of the gastric cancer cases and in 78.5 per cent. of the cases of gastric cancer without a previous ulcer. The pathologic changes in the mucosa were about the same with all these, differing only in degree. No concordance could be found between the histologic picture presented by the mucosa of the fundus and the behavior of the stomach secretion. There was nothing characteristic discovered in the fundus glands indicating either hypersecretion or hyperacidity. With gastric ulcer, follicular erosions were frequently encountered. The gastric ulcer patients who had signs of gastritis suffered from stomach disturbances after the gastro-enterostomy in greater numbers than was the case with patients with gastric ulcer without gastritis.

120. **Diagnosis of Stomach Functioning.**—Znojemsky has been making a special study of Sahli's method of testing stomach functioning by means of a flour soup with considerable fat. This technic permits insight into the motor, the secretory and the acid functioning of the stomach all at once. He has improved the original formula for the soup to make it a very fine emulsion, and he here reports the application of the test and summarizes quite a number of cases from the various groups of gastric cancer, ulcer and pylorospasm, as well as twenty-five cases of gall-bladder disease and fifteen of wandering kidney out of his total of 600 cases of these different affections. The findings confirm the reliability and importance of the method, especially in cases with uncertain palpation findings. He found that considerable reduction of the motor and secretory functioning and acidity, when lactic acid is present, are signs of cancer at the pylorus. Gastric cancer is rendered probable by reduction in the secretion and acidity with normal motor functioning and the presence of lactic acid. When the motor functioning is reduced and the secretory functioning somewhat reduced, as also the acidity, but no lactic acid is found, the presumption should be carcinoma of the pylorus developing in an ulcer. The same findings with normal motor functioning speak for gastric cancer elsewhere developing on an ulcer. An ulcer in the pylorus region is generally accompanied by reduced motor functioning, normal or reduced secretion and hyperacidity. A gastric ulcer, generally speaking, is accompanied by normal motor functioning. normal or reduced secretion and hyperacidity. Reduced motor functioning with normal secretion and normal acidity testifies to gastroptosis. Normal or reduced motor functioning, with hypersecretion but nearly normal acidity speak for duodenal ulcer or an ulcer behind the pylorus. Reduced motility, secretion and acidity are almost always characteristic of gall-stone disease and wandering kidney. All these various types of gastric functioning were found practically constant in the 700 patients to whom the functional test has been applied in the course of the last seven years. Sahli avoided the usual drawbacks of test meals by using a homogeneous mixture of fat. This permits comparison of the amount of fat left in the stomach after a given period as the suspension used is not absorbed in the stomach. (The method was described in THE JOURNAL, 1902, xxxviii, 1480, Abstr. 88.) The great objection to the method is that the butter does not form a true emulsion in the flour soup, and is unevenly distributed through it. These drawbacks have been obviated by Znojemsky by using almond oil instead of butter. This can be obtained chemically pure and keeps a long time; the emulsion can be made with it cold and the particles of fat are much smaller and remain evenly distributed through the suspension. He mixes 25 gm. almond oil and 10 gm. gum arabic with 7 gm. distilled water until thoroughly emulsified. Then more water is added to bring the amount to 250 gm., and the vessel is set aside for an hour. Then 200 gm. of the emulsion is drawn off from below, leaving the upper layer untouched. The flour is prepared by stirring 20 gm. of wheat flour in 200 gm. water and allowing it to boil up once, constantly stirring. When thoroughly cold, the almond oil suspension and the cooked flour are shaken up thoroughly together. The emulsion thus obtained can be filtered through linen. To make it more palatable, he adds 25 gm. of syrup of raspberry. The determination of the fat in the stomach content by the butyrometer according to von Gerber is extremely simple, he says, and never fails. He devotes seventy pages to detailed reports of the typical findings and reiterates their diagnostic importance for the correct topical and pathologic diagnosis of surgical stomach affections, especially those with dubious palpation findings.

121. **Treatment of Fractures with Extension in Walking Plaster Cast.**—The illustrations show the advantages of Hackenbruch's device for ambulatory extension. He cuts the plaster cast across in the middle and pushes the halves apart by a metal clamp built into the plaster cast. It bridges the gap and widens it as a central nut is turned on a screw thread which widens the space between the two ends. A ball-bearing joint permits the traction to be applied in various directions.

122. **Congenital Defect in the Fibula.**—Hesse devotes nearly a hundred pages to a study of the seventy-six cases he has found on record in which various measures were applied to substitute the missing bone. He also describes in detail the case of a boy crippled from lack of nearly the entire fibula. His experimental research sustains the clinical observation that it is possible to slit lengthwise a long bone in the region of the epiphyseal cartilage without interfering materially with the growth afterward. In the case described the boy could use his sole normally, the ankle was ankylosed but the tibia was stout and serviceable although the leg was not much more than half the length of its mate. There was no reason for operating and the child was fitted with a splint device with artificial foot which permits what amounts to a normal gait.

123. **Restoration of Vagina.**—Albrecht describes his experiences in three cases in which he made a new vagina out of the sigmoid flexure drawn down into a passage dug out for it. The access to the bowel was by the sacrum. This part of the bowel is stouter and stronger than the small intestine, which has generally been used in such operations. His success apparently confirms the advantages of the method.

Medizinische Klinik, Berlin

June 29, IX, No. 26, pp. 1023-1064 and Supplement

125 *Treatment of Recent Wounds and Severe Burns. (Behandlung frischer Wunden und schwerer Verbrennungen.) G. Schöne.
126 Scientific Bases for Hydrotherapy. A. Strasser.
127 Fracture of Fifth Lumbar Vertebra. (Kompressionsfraktur des fünften Lendenwirbels.) M. Lewandowsky.
128 Tests of Kidney Functioning. (Ueber Funktionsprüfungen der Nieren und ihre Bedeutung für die Therapie.) M. Roth.
129 *Differential Atmospheric Pressure in Treatment of Heart Disease. (Druckänderung der Lungenluft nach Albrecht als Behandlungsmethode bei Herzkrankheiten.) F. Hapke.
130 Congenital Backward Dislocation of the Knee. (Zur Kenntnis der angeborenen Luxationen im Kniegelenke nach hinten.) J. Lazarraga.
131 Carbohydrate Diet in Diabetes. R. Roubitschek and O. Gaupp.
132 *Death after Lumbar Puncture. W. Reusch.
133 *Spasmophilia in Children. (Die Krämpfe der kleinen Kinder.) O. Thorspecken.

125. **Treatment of Burns and Fresh Wounds.**—Schöne comments on the divergence of opinions in regard to treatment of fresh wounds and burns, but states that the results of experiments, like those of Friedrich, indicate the proper bases for treatment. Friedrich showed that it makes a vast difference whether a wound is infected with bacteria in pure cultures or whose virulence had been enhanced by conditions such as tropical heat, or whether the wound had been infected with ordinary dirt. The experiments demonstrated that an incubation period of six to eight hours occurs before the germs are taken up into the general circulation. Radical extirpation into sound tissue in time can thus remove the source of trouble. But this excision must be done in such a way as to combine with it the principle of aseptic sparing of the tissues. The technic must be thorough and clean, the cutting done with smooth, sharp instruments, avoiding any boring and pulling, and thus leaving the simplest possible conditions in the wound.

The two great principles of treatment of wounds, the aseptic refraining from meddling and the radical excision into sound tissue are not conflicting measures but can be combined. The aseptic sparing of the wound is the principle to be applied in the majority of firearm wounds with small projectiles and many cases of compound fractures. On the other hand, extensive crushing injuries of soft parts and bones, dangerously soiled, do better when the injured portions have been cut out. He knows of no other means of treating fresh accidental wounds which can compare in reliability with treatment on these principles.

Burns must be viewed from another standpoint, as the injury is from absorption of the toxic products generated in the burned tissues, possibly with the cooperation of the adjacent living tissues. He thinks that infection also plays a more important part in burns than has hitherto been admitted. He has seen many persons die from burns with symptoms indicating sepsis, but aseptic intoxication is a still more potent factor. An experimental burn otherwise fatal may prove harmless and the animal recover if the burned part of the skin is cut out within a few hours. If this patch of burned skin is transplanted on a second, healthy animal, it dies as if it had been the victim of the burn in the first place. These experiments explain also the tardy deaths after burns when all seems to be doing well. Tschmarke reasoned from these premises that the burned area should be rendered sterile and the burned tissues removed. His principles have not been followed by many surgeons as they dislike to attack the burned area in this way, but the progress of science has confirmed the soundness of his premises. With a burn of the third degree the burned pieces of the skin should be removed under aseptic conditions; with a burn of the second degree it is an easy matter to remove a large part of the burned epidermis by vigorous scrubbing, and thus to prevent its decay and the absorption of toxins. Schöne has applied the method in a large number of cases of extensive burns of the second and third degree and has been delighted with the results. In several cases of burns of the second degree involving the whole of the face, both arms, chest and part of the legs, the burned area, under slight ether anesthesia, was vigorously scrubbed with hot soapy water and a brush, thus removing the entire burned epidermis. The area was then washed with 60 per cent. alcohol and then smooth layers of gauze were fitted over the parts with cotton dressings outside. During the first two weeks only the outer layers of gauze were changed; during the next week the inner layer of gauze dropped off of itself and the primary healing beneath was found absolutely ideal. Even in cases of burns of the third degree it was found possible to restrict the suppuration by prevention of severe infection and thus to save many islands of epithelium which otherwise would have been lost under the influence of infection. The entire course was in these cases unusually mild. The only adjuvant measure applied was subcutaneous infusion of saline to counteract the loss of fluid in the profuse secretion. He admits that the method should be applied with caution. In one case it seemed as if the shock of this vigorous sterilization had hastened the end, inevitable from the severity of the burn. It is possible, Schöne remarks, that the aim might be reached in some gentler way, but tincture of iodin, passive hyperemia, serotherapy and measures to enhance the general resisting powers of the organism, although promising, cannot be relied on to accomplish the same.

129. **Differential Atmospheric Pressure in Treatment of Heart Disease.**—Hapke reports experiences with Albrecht's method of having the patient breathe rarefied air, then ordinary air and then compressed air, taking a few breaths in each in turn. The aim is to imitate the natural mechanical dynamic influencing of the lesser circulation by the respiration. The results seem to speak for a favorable action from the method, systematic repetition of the sittings promoting better conditions in the circulation, especially in the coronaries.

132. **Death after Lumbar Puncture in Uremia.**—The patient was a woman of 30 with severe headache and vomiting for eight weeks and signs of subacute parenchymatous nephritis. The symptoms subsided in a month under ordinary measures, all except the headache. To relieve this, lumbar puncture was done. The pressure was 190 mm. water; and after the withdrawal of 13 c.c. of cerebrospinal fluid, the pressure dropped to 110 mm. and the needle was removed. The headache was at first somewhat better but four hours later the woman died suddenly and a fresh hemorrhage was found in the left internal capsule, evidently from rupture of a degenerated cerebral vessel from the change in pressure.

133. **Spasmophilia.**—Thorspecken remarks that this constitutional anomaly is manifested in a measurable electric and mechanical excessive irritability of the nervous system which causes a predisposition to certain partial and general tonic and clonic spasms, contractions and convulsions. It is a favorable feature that the excessive electric excitability of the motor nerves is not only the most important but also the most constant symptom of spasmophilia, and reveals the pathologic condition in the mildest, even the latent forms, thus pointing the way to the proper measures. It is as important for differentiation as sugar in the urine of the diabetic, and like this may be the only objective sign of trouble. The mechanical irritability of the nerve roots, the Chvostek sign and the Trousseau, are not so constant. It is probable that cases of sudden death in apparently healthy children are due to sudden spasm of the larynx or of the nerves controlling the heart. Spasms have been observed not only in striated muscle but also in the sphincters and the smooth musculature innervated by the sympathetic system. The season seems to have an influence on the spasms. In Escherich's 246 cases only seven were in the four months, July to October. The influence of the diet is preeminent, especially the injurious influence of cow's milk. The fact that inadequate assimilation of lime is an important factor in the development of both rachitis and spasmophilia explains why the two are so

often associated. Unusual filling of the stomach is a frequent cause for the spasms, and in the cases of sudden death of children from arrested heart action the last meal had been unusually copious in nearly every case on record. On the other hand, dilatation of the stomach does not seem to have any influence, judging from roentgenoscopy of young children with manifest spasmophilia. Treatment must be mainly dietetic, changing to breast milk or tea alone. With children over a year, milk can be dropped for a week without harm. In all cases of spasmophilia cod liver oil or phosphorus-cod liver oil is indicated. Under this alone in many cases, without any change in the diet, the symptoms of spasmophilia will disappear. Phosphorus with other oils is ineffectual. The phosphorus must be fresh and renewed every two weeks at least, as it has no action if it is oxidized. Only elementary phosphorus has any influence in spasmophilia or rachitis. All the other preparations of phosphorus, in which it appears as phosphoric acid or in organic combinations, are ineffectual. It is still a question whether calcium salts by the mouth have any influence on spasmophilia, although some recent reports mention success from large doses of calcium chlorid (3 to 6 gm. per day), but further experience is necessary. Nothing is to be expected from bromids or parathyroid treatment although the latter may be successful in postoperative and experimental tetany. Chloral is very useful as a symptomatic means to arrest the convulsion. It has the advantage over chloroform that it can be left in intelligent lay hands. The proper dosage, he says, is about 0.5 gm. in an enema, which dose young children will bear without harm; it leads to subsidence of the spasm in a few minutes and sleep for several hours. The same dose can be repeated the same day or even for several days until the causal treatment makes its effects felt. The general prophylaxis of spasmophilia is mainly a question of breast-nursing. Children with a predisposition should be kept with special care from excitements and from copious meals, and they should be kept in the open air, especially in winter, and be protected against infections, particularly against whooping-cough.

Münchener medizinische Wochenschrift

July 1, LX, No. 26, pp. 1417-1472

134 *Metal Salts Technic for Differentiation of Bacteria. (Die Untersuchung verwandter Bakterienarten durch die Ausfällung ihres Eiweisses mittels konzentrierter Salzlösungen.) H. Liefmann.
135 Serodiagnosis. (Serologische Untersuchungen mit Hilfe des Abderhaldenschen Dialysierverfahrens bei Gesunden und Kranken. Studien über die Spezifität der Abwehrfermente.) A. E. Lampé and L. Papazolu. (Experimentelle Untersuchungen über die Spezifität der proteolytischen Schutzfermente—Abderhalden.) E. Frank and F. Rosenthal. (Zur Serumreaktion nach Abderhalden.) Lichtenstein.
136 *Recovery from Tuberculous Meningitis: Two Cases. V. Reichmann and F. Rauch.
137 Technic for the Wassermann Test. (Zur Technik der Blutentnahme für die Wassermannsche Reaktion.) P. Mulzer.
138 *Treatment of Spondylitic Paralysis. P. Bade.
139 *Traumatic Thrombosis of the Inferior Vena Cava in Relation to Life Insurance. F. P. Weber.
140 *Reduction of Hernia in Infants. (Ein einfaches Hilfsmittel bei der Reposition ausgetretener Hernien der Säuglinge.) A. Nussbaum.
141 *Complications Following Injection of Pituitrin. (Zur Kasuistik der Pituitrinwirkung.) Grumann.

134. **Differentiation of Bacteria with Magnesium Sulphate.**—Liefmann has been applying to the differentiation of bacteria the principle of Nonne's reaction, namely, the opalescence, agglutination or precipitation which follows when the fluid under examination is mixed with an equal amount of a concentrated solution of a salt of the light metals, especially ammonium or magnesium sulphate. He tabulates the findings in dozens of specimens of various bacteria; they show actually a specific response, sifting out the different species. Typhoid bacilli give no response but it is almost constant with paratyphoid bacilli and with true cholera germs. A twenty-four hour agar culture of the bacteria is suspended in 3 c.c. distilled water and then filtered or centrifugated to clear it of the larger particles. The magnesium sulphate is in saturated solution in distilled water, which requires twenty-four hours to make. It is well shaken up before using and the test tubes are filled to 1 c.c. each, over 0.1 c.c. of the culture suspension. He thinks that the reactions thus obtained with the bacteria suggest the possibility that characteristic findings may be obtained with simple physical means which will prove as instructive as *with the serum of prepared animals*.

136. **Recovery from Tuberculous Meningitis.**—Reichmann and Rauch report two cases of recovery from unmistakable meningitis with tubercle bacilli in the cerebrospinal fluid; one patient was a child less than 2 years old, the other a robust young man. Both were treated by lumbar puncture and the application of a Bier constricting band. They cite from the literature eighteen other cases of recovery, more than half dating from the last five years. Their child patient had the lumbar puncture done five times, withdrawing a total of 55 c.c. of fluid, and the constricting band was not applied very tightly. The benefit from the second puncture was striking. The fluid was under 500 mm. water pressure and it kept at a high point in spite of the progressive improvement, being still 300 mm. at the time of the last puncture, twenty-three days after the first; the first symptoms had been noticed three months before.

138. **Non-Operative Treatment of Spondylitic Paralysis.**—Bade has been delighted with his success in curing paralysis of spondylitic origin in eight cases during the last four years, refractory to months of systematic treatment by other means. His aim was to get the patient up out of bed and train his muscles to functionate anew, without any operation. The child was placed in a plaster cast from head to toes, suspended to allow the toes to touch the floor. The cast was then removed and a model made from it on which splints and other appliances were fitted, with elastic traction to overcome the contraction of the muscles. The paralyzed patient stands immovable, like a doll, in this harness, but he is placed in a walking frame so that he cannot fall, and he soon learns to utilize the traces of muscular function still possible. In a week or up to four or six weeks his patients were able to move forward a little by means of the psoas iliacus; this was the first step toward complete recovery. Vigorous massage and gymnastic treatment were further factors in the cure. For this the patient is twice a day freed from his harness and the paralyzed muscles are massaged and the joints passively exercised. Within two months or a little more the splint for the trunk can be discarded. The paralysis of the legs persists longest, and it may be difficult to move them even after nine months, but in time all his patients were completely cured. He ascribes the success to *the better circulation in* the spinal cord, the fact that the pus of an abscess or edema fluid can work its way downward better than when the patient lies on his back, and thus no one point suffers so much. Another factor is the elimination of the irritation sent to the spinal cord by the abnormal contracture of the muscle. As the splints reduce the contracture this irritation ceases. Equally important perhaps is the effect on the spirits of the patient to be up and about instead of fastened immovably to his bed. Bade thinks that the Stoffel operation attacks merely the symptoms and does not remove the cause, while the Förster operation and MacEwen's laminectomy are too dangerous if less serious measures are at our disposal.

139. **Traumatic Thrombosis in Relation to Life Insurance.**—Weber concludes from three cases which he has encountered that traumatic thrombosis of the inferior vena cava is not incompatible with long survival. Collateral circulation soon develops. (Compare also case reported in The Journal, 1913, lx, 1878.)

140. **Aid in Reduction of Hernia in Infants.**—The child's incessant screaming and consequent stiffening of the abdominal wall nullified all attempts to reduce a large inguinal hernia in a three-months' infant. Nussbaum then blew sharply into the infant's face and the screaming ceased at once, the child struggling, but not screaming, and the abdominal wall was soft. Each time it started to scream, this was arrested by blowing suddenly and sharply in its face, and

Nussbaum thinks that this simple measure may be found a useful aid in abdominal palpation of young infants.

141. **Serious Complication Following Use of Pituitrin.**—A woman of 32 was in labor with her first child. The cervix was rigid, the membranes ruptured, the labor pains weak and far between, the os dilated about the size of a silver quarter. The third day *an injection of pituitrin was given,* two hours later a second injection and the cervix was slit. *Five hours* later a third and two hours later a fourth injection of pituitrin was given. They were followed in half an hour by labor contractions so excessive that they kept up practically continuous for two hours, with spasmodic closure of the cervix. *Finally* pain in the sacral region became intense, requiring *morphin; the temperature* rose and also the pulse, and a mixture of amniotic fluid and stool escaped from the cervix. As a consequence of the two hours' pressure of the fetal skull on the sacrum from the intense contraction of the uterus, under the action of the pituitrin, the tissues between had been destroyed and a fistula was formed between the rectum and the cervix. The child was delivered with forceps and died the seventh day from sepsis.

Petersburger medizinische Zeitschrift, St. Petersburg

June 28, XXXVIII, No. 12, pp. 140-149

142 Myoma of the Uterus and Pregnancy. (Ueber Uterusmyom und Schwangerschaft.) A. v. Schrenck.

Therapie der Gegenwart, Berlin

July, LIV, No. 7, pp. 289-336

143 Disease of the Stomach. (Fortschritte in der Behandlung der Magenkrankheiten.) G. Klemperer. To be continued.
144 Exophthalmic Goiter. (Diagnostische und therapeutische Bemerkungen zur Basedowschen Krankheit: 100 Fällen.) J. Hallervorden. To be continued.
145 *Spontaneous Rupture of the Eyeball. W. Dolganoff.
146 Radium Pessary for Hemorrhoids. H. Schwieder.

145. **Spontaneous Rupture of the Eyeball.**—Dolganoff has encountered five cases which evidently belong in the category of spontaneous rupture of the eyeball. Analysis of this material, however, confirms the assumption that spontaneous rupture from within cannot occur. There must always be some external force, and study of the *individual* case will reveal the causes predisposing to the rupture.

Virchows Archiv, Berlin

May, CCXII, No. 2, pp. 161-320

147 Experimental Alimentary Atherosclerosis. W. Steinbiss. Commenced in No. 1.
148 Pathology of the Pancreas. H. Apolant.
149 Parenchymatous Cancer of the Liver. K. Yamagiwa.
150 Histology of Congenital Syphilis of Small Intestine, with Spirochetes. G. Warstat.
151 The Anatomic Changes in Experimental Mercuric Chlorid Poisoning in their Dependence on the Vascular and Nervous Systems. F. Weiler.
152 Deposits of Lipoids in Organs. (Ueber die Ablagerung von fettartigen Stoffen in den Organen.) N. W. Wesselkin.
153 Lipoid Nerve Cell Pigment and the Question of Age. M. Mühlmann.

Wiener klinische Wochenschrift, Vienna

June 26, XXVI, No. 26, pp. 1053-1100

154 *Early Diagnosis of Gastro-Intestinal Cancer. (Ueber Frühdiagnose der Karzinome des Verdauungskanals.) E. Schütz.
155 *Gangrene of the Extremities. H. Ehrlich and M. Maresch.
156 *Benzol in Leukemia. (Zur therapeutischen Verwendung des Benzols.) G. Kiralyfi.
157 Primary Cancer of the Lung; Nine Cases. J. v. Wiczkowski.
158 *Pseudotuberculous Ulcerations on Female Genitals. (Zur Klinik und Aetiologie der pseudotuberkulösen Geschwüre am weiblichen Genitale.) G. Scherber.
159 Melanosarcoma of the Ovary. J. Bondi.
160 Heliotherapy in Surgical Tuberculosis. A. Wittek.

154. **Early Diagnosis of Cancer.**—Schütz does not present anything actually new, perhaps, but he reiterates points which he declares cannot be emphasized too often as it is rare for cancer of the gastro-intestinal tract to develop with a long period of latency; there are generally some signs of disturbance which, if only heeded, would permit detection of the malignant disease in its first although not in its incipient stages. The public must be educated to apply for medical examination when these early vague signs appear, and the physician must make a practice of thorough examination in every case of not entirely acute gastro-intestinal disturbance, supplementing palpation, functional tests and endoscopy with roentgenoscopy. Among the further points which he emphasizes is the great diagnostic importance of examining for *stenosis of the esophagus* in every case of persisting vomiting or regurgitation soon after meals, *not explained* by some cause outside of the alimentary canal. A stiff catheter should be introduced first into the esophagus and when it meets with an obstruction a soft tube should be introduced in its place. This combination often reveals lesions not discoverable with either catheter alone; blood and tissue scraps may be found *in the opening of the tube or catheter used.* The distance from teeth to stomach varies in wide limits in different persons, so that the tube may have to be introduced for 45 cm. or more before it enters the stomach. An hour-glass stomach or cancerous contracted stomach may simulate stenosis of the pylorus, but roentgenoscopy will clear up the diagnosis. The absence of the "second sound of swallowing" is significant; also the *fact that fat meat is swallowed* more easily than lean. Even a large palpable tumor in the stomach does not necessarily contra-indicate operative measures; proper palpation and interpretation of the findings require skill which not all possess. The technic should be cultivated by practice on normal persons, so as to distinguish pathologic conditions when they are encountered, and the examination should be *done with the patient in various positions. He has frequently* had the experience that a contracted loop of bowel or the belly of the abdominal rectus has been taken by even experienced clinicians and specialists for a neoplasm. Schütz has never encountered lactic acid in the stomach content with a simple gastric ulcer, while cases which seemed to be merely ulcer but *in which there was subnormal acidity and lactic acid was present always turned out to be cancer. On the* other hand, even large tumors proved to be merely ulcers whenever hyperacidity was evident. Consequently he preaches that stenosis of the pylorus with lactic acid and no free hydrochloric acid should be treated as for malignant disease, as also the callous and penetrating ulcers which are so liable *to turn into cancer, and which can be readily detected by roentgenoscopy. He states that he found achylia only* in 3 per cent. of 830 patients with non-cancerous disease of the stomach, and he found a lack of free hydrochloric acid in only 7 per cent. of 1,000 cases of non-malignant disease of the stomach, while no free hydrochloric acid was found in 70 per cent. of 150 cancer patients. Others have reported even larger proportions. The absence of *hemorrhage,* evident or occult, *does not exclude cancer.* On suspicion of intestinal cancer, systematic palpation a few hours after taking a dose of a purgative mineral water often proves instructive from the accumulation of fluid above the obstruction in the gut under the action of the purgative. Schütz deplores the neglect of digital examination of the rectum as directly contributing to the fatalities from *rectal cancer.* We must realize, he emphasizes, that blood may come from hemorrhoids and yet there may be a cancer in the gut above; the discovery of bleeding hemorrhoids does not do away with the necessity for digital examination of the rectum when symptoms such as blood and mucus in the stools and tenesmus call for determination of their cause. Cancer is usually accompanied by hemorrhoids—*far* from their excluding *malignant* disease. Chronic diarrhea is also a frequently overlooked symptom of rectal cancer; it is not only one of the most frequently occurring but is also one of the earliest and sometimes *for long* the only or the most prominent symptom *of malignant* disease of the rectum. He *encounters every year* a number of such patients whose significant chronic diarrhea had been treated *for months* by all kinds of means for intestinal catarrh, no one of the physicians consulted taking the pains to make a digital examination of the rectum which would have revealed the cause of the diarrhea at *once,* alone or supplemented by rectoscopy. *Many of* these patients had taken courses at Carlsbad and *other* spas under medical supervision while their overlooked malignant disease was passing into the

inoperable stage. Prompt proctoscopy has often revealed a cancer in its incipiency. In some cases the diagnosis was made possible only by finding blood-streaked scraps of feces in the opening at the tip of the proctoscope when nothing abnormal could be found in the rectum itself. Foges has recently reported a case in which a rectal polyp was found in cancerous degeneration in the center. In short, Schütz thinks it is up to the general practitioner to make such a systematic routine examination that no gastro-intestinal cancer causing the slightest signs or symptoms will ever escape his diagnosis.

155. **Gangrene of the Extremities.**—Ehrlich and Maresch review the experiences at von Eiselsberg's clinic in eighty-one cases of gangrene of the feet or hands. The list includes one from electric accident, two from puerperal embolism (with amputation of the thigh in one case); forty-four from arteriosclerosis and twenty-nine from diabetes. With arteriosclerosis there had generally been for years paresthesias, chilliness in the limb, rheumatic pains or intermittent limping with later cyanosis of the limb, toe ulcer dragging along without healing or flat-foot disturbances in the elderly. They emphasize the extreme importance of prophylactic measures in such cases, resting the limb, keeping it raised, avoiding all thermic or traumatic injury, and sparing the limb as much as possible. In one case all four extremities became involved in the course of ten years but the tendency to gangrene in the hands subsided under antiphlogistic measures and potassium internally. The patient, a man of 42, has been in good health during the three years since. He had previously had the toes of one foot and the other thigh amputated on account of gangrene. The experiences with senile gangrene confirm the general assumption that conservative amputation usually has to be followed by more extensive amputation later, and it is a serious matter to have the intervals between too short.

Two patients died of pneumonia of nine treated by amputation of the leg for arteriosclerotic gangrene and two among eighteen requiring amputation of the thigh (seven of both thighs). Another succumbed to sepsis not benefited by the amputation. The operations were done under light ether anesthesia or spinal anesthesia, the latter being given the preference in case of existing bronchitis. The results observed confirm the wisdom of waiting for demarcation in all forms of gangrene which are not due to a diffuse or progressing affection of the arterial system; namely, gangrene after accidents, burns or freezing in the young, unless some septic process compels earlier intervention. In case of arteriosclerosis, with good condition otherwise, the spontaneous sloughing off of the toes can be encouraged. The slight prospects of a permanent cure discourage operations on the foot itself. In case of defective demarcation, spreading of the process, infectious complications or unbearable pains, amputation is indicated which should always be in the thigh in case of senile gangrene. At an earlier age amputation may be done in the leg if the extent of the gangrene permits, if the pulse is palpable at least in the popliteal artery and the stump bleeds freely during the operation. The experiences with diabetes emphasize the necessity for amputation of the thigh if any operation on the limb is attempted. The indications thus differ with diabetes, as such patients bear after-operations badly and conservative operations should not be attempted unless the urine is free from sugar and there is no danger of acidosis. Amputation of the leg in ten diabetics was followed by the death of eight; the stump became gangrenous in four and the thigh had to be amputated. The second operation was responsible for the fatality in these cases. In eleven other diabetics the thigh was amputated at once and only six died. A diabetic phlegmon of the hand on one patient healed after incision and enucleation of the finger. The stumps in the diabetics healed very slowly; dehiscence occurred in several cases even after two weeks' afebrile course. Only traces of granulation are evident and the tissues seem predisposed to secondary infection, manifesting itself either as an acute fatal phlegmon or a dragging, only slightly virulent suppuration, finally bringing on coma

156. **Benzol in Leukemia.**—Kiralyfi recalls that Koranyi was the first to call attention to the action of benzol in leukemia, and he here brings down to date the experiences with this method at Koranyi's clinic. He emphasizes that in future greater caution in the dosage is necessary, as it has been found that certain after-effects will have to be reckoned with. On this account he now advises to suspend the benzol before the leukocytes have dropped to the normal figure. When the figure has reached 25,000 or 20,000 the benzol should be dropped, or, better yet, it should be suspended as soon as the number of leukocytes starts to decline. Neumann has reported a case in which the leukocytes dropped under benzol from 56,000 to 5,000 and later to 200 but the patient's nose began to bleed and the hemorrhage became uncontrollable, the patient dying thirty-nine days after suspension of the benzol.

Kiralyfi had a similar experience with a girl of 18 with symptoms of leukemia for two years, and at the time of treatment 73,000 leukocytes, great enlargement of the spleen and temperature up to 40 C. (104 F.). As the patient could not take the benzol by the mouth, it was given in a rectal enema of 2 gm. benzol in 50 gm. olive oil three times a day. In a week the leukocytes dropped to 33,200 and by the sixteenth day to 5,000 while the spleen subsided in size, the temperature to normal and the patient felt well. The benzol was then suspended and the case was cited as a brilliant example of the curative action of benzol. The leukocytes continued to drop until they numbered 2,800; then epistaxis commenced and continued for seven days scarcely influenced by local measures and injection of gelatin or serum. With the decomposition of the blood behind the tampons fever developed, and the patient died as the heart action grew weaker, the twenty-second day after suspension of the benzol. The leukocytes then numbered only 460; no myelocytes could be found and there were only 3 per cent. myeloblasts. No other instance of such hemorrhage has been encountered at the clinic. The case teaches that benzol acts by the rectum as effectually as by the mouth, and also that the desired aim should be reached more gradually. Another case reported illustrates the aggravating influence of a pregnancy in the course of leukemia. The patient had been clinically cured by two courses of benzol treatment in about nine months. Then she became pregnant and at term the old leukemic symptoms returned in a more pronounced form.

Treatment with benzol has also been tried in other affections accompanied by enlargement of the glandular apparatus without pathologic increase in the numbers of the leukocytes, the pseudoleukemias, and also in polycythemia. The benzol proved far less effectual in simple granulomatous enlargement of the lymph-nodes than in the lymphocytic forms of pseudoleukemia. The enlarged nodes become reduced in size, just as under Roentgen-ray exposures but, the same as with these, the improvement proved only transitory. The benzol seems to have no action on the fever in this group of cases. In generalized lymphocytomatosis, true pseudoleukemia, we can count, he says, on an almost certain and perfect action of the benzol. He states that the accompanying nephritis is not only not aggravated by the benzol but materially improves under it, according to his experiences to date.

158. **Pseudotuberculous Ulcerations on Female Genitals.**—These ulcerations on the external organs of girls and women differ from syphilitic and other lesions by their acute inflammatory, superficial nature, the rapid development and extreme painfulness, and the shape of the ulceration. They respond readily to mild antiseptic measures, healing in ten or fourteen days, while they drag on indefinitely untreated. They seem to be due to mixed infection; in one little girl infected from a sister two years older the germs seemed to have become more virulent. When the ulcerations are mistaken for syphilitic lesions and local treatment is omitted, they continue a progressive course. In all the few cases known to date the patients were virgins. The ulcerations come on with or without high fever, numerous distinct, pin-head, greyish-white or yellow nodules developing into ulcerations with or without a pseudodiphtheritic false membrane. The

ulcerations may become confluent; they are shallow, sharply circumscribed, with generally regular edges and uneven ground. They are further distinguished by being so extremely painful to the touch. In one case the inguinal lymph-nodes were swollen. The affection reaches its height in two or three days; each ulceration then persists indefinitely unless given mild antiseptic treatment. This is Scherber's second published report on this subject.

Zentralblatt für Chirurgie, Leipsic

July 5, XL, No. 27, pp. 1065-1096

161 *Operation for Cancer of the Esophagus. W. Denck.
162 Removal versus Exclusion of Appendix. (Appendektomie oder Ausschaltung?) R. v. Rauchenbichler.
163 *Test for Blood-Supply with Gangrene of the Foot. (Zur Bestimmung der Ernährungsgrenze bei Gangraena pedis.) W. Sandrock.

161. **Resection of Cancer of the Esophagus.**—Denk describes a method of resecting the esophagus for cancer below the bifurcation of the trachea. Through an incision 20 cm. long parallel to the left costal arch the esophagus can be loosened with the finger up to the bifurcation without bleeding and without injuring the pleura. He supplements the finger with a little instrument like a vein stripper. If the cancer cannot be separated out without cutting, he concludes with a gastrostomy. If the cancer proves removable, he then exposes the esophagus in the neck and mobilizes the upper portion in the same way. Then with both hands, one working from below and one from above, it is possible to detach the esophagus all around without the least difficulty. He then clamps it above the cardia and applies on each side two 1 cm. wide metal clips, like Cushing's aneurysm clamps, and after applying a clamp on the cardia beyond, the esophagus is cut across close below the clamps. A ligature can be applied above the clamps to be a further protection. The entire esophagus is then, with its cancer, drawn out through the incision in the neck and the cancerous segment excised, the central stump drawn into the subcutaneous tissue in the front of the chest and the open end sutured to the skin. The operation concludes with a gastrostomy; or this can be done two or three weeks before the radical operation. After healing he connects the stump of the esophagus with the gastrostomy tube to restore the functioning of the gullet. The operation has not yet been applied in the clinic but its feasibility has been abundantly established on the cadaver and on animals. The advantage of the method is in the avoidance of any injury of the pleura and in the impossibility of infection of the mediastinum with the contents of the esophagus, while the dangers are no greater than with the transpleural methods.

163. **Gangrene of the Foot.**—Sandrock reports an extremely simple measure with which it is possible to determine with precision the limit of the available blood-supply. He discovered it accidentally as he was doing an amputation. The field had been sterilized by rubbing with ether-alcohol more vigorously than usual. He noticed that the thigh had turned red under the rubbing but only down to a certain point on the leg where the reactive hyperemia stopped abruptly and below, although the parts had been rubbed equally vigorously, the leg was still absolutely pale. Other tests were applied, all showing the same limit of the blood-supply at this circular boundary. Since then he has applied the test in various cases of diabetic or vascular gangrene and always found that the diffuse redness of the well-nourished part of the limb stopped short at the limit of the defectively-nourished part. In all his experience when he amputated at this boundary line he has never had occasion to regret it. He controls the test by rubbing the patient's sound leg at the same time. The difference is marked.

Zentralblatt für Gynäkologie, Leipsic

July 5, XXXVII, No. 27, pp. 989-1028

164 Research on Embryonal Tissue. (Zum Studium der autolytischen und autoplastischen Vorgänge im embryonalen Gewebe.) F. Daels and C. Deleuze.
165 Kraurosis and Cancroid. R. Teuffel.
166 *Prophylaxis of Uterine Cancer. (Ein Mahnruf an die Gynäkologen.) L. M. Bossi

166. **Prophylaxis of Uterine Cancer.**—Bossi declares that trying to educate the public to apply for examination at the first sign of cancer is not prophylaxis; it is surgery. Gynecologists should aim to prevent the development of uterine cancer, and he thinks that his twenty-seven years of clinical experience sustain his contention that this is possible, namely, by curing up all chronic inflammations and by refraining from the abuse of heroic local applications. Epithelioma of the cervix does not develop if all chronic ulcerative processes there are systematically excised. In the same way, curetting hyperplastic formations in the uterine mucosa will prevent malignant disease in the uterus later. In his experience with 7,000 cases in which he has performed these little operations on the vaginal portion of the uterus he has never had cancer develop later in any instance. His experience sustains the view that cancer is not of microbian but solely of histologic origin, and that in most cases it originates in lesions which in themselves are not malignant but which degenerate into cancer if they are not treated in time or if they are not treated correctly. The true prophylaxis of uterine cancer is therefore early systematic and persevering surgical treatment of benign affections of the cervix and uterine cavity.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 1, XXXIV, No. 78, pp. 807-814

167 *Resection of Liver for Tumor. (Resezione dell'ala sinistra del fegato per cavernoma.) L. Z. Colleoni.
168 *Compulsory Declaration of Tuberculosis. (La denuncia obbligatoria della tubercolosi.) F. Maffi.

July 3, No. 79, pp. 815-822

169 Weiss' Permanganate Test for Urochromogen. L. Dozzi.

167. **Resection of the Liver.**—Colleoni was able to resect the left lobe of the liver for a large blood-vessel tumor, a cavernoma, with the smooth recovery of the patient, a woman of 54. The excised portion after draining out most of the blood weighed 570 gm. There was no special hemorrhage during the operation.

168. **Compulsory Declaration of Tuberculosis.**—Maffi thinks that the tuberculosis dispensaries answer all the purposes aimed at by compulsory declaration of the "open" cases of tuberculosis, and with far greater precision. He adds that compulsory declaration must eventually prove either a farce or savage brutality unless followed up by comprehensive care and support of all the tuberculous. "Let's begin with this," he says, "and come to the compulsory declaration later."

Policlinico, Rome

June 29, XX, No. 26, pp. 917-952

170 Adrenal Organotherapy in Epilepsy. (Opoterapia surrenomidollare ed epilessia.) T. Silvestri.

Hospitalstidende, Copenhagen

July 2, LVI, No. 27, pp. 745-768

171 *Carcinoma of the Prostate Simulating Lymphomatosis. C. Lundsgaard.

171. **Carcinoma of the Prostate Simulating Lymphomatosis.**—The patient presented apparently a typical case of lymphomatosis. Not only the clinical course but also the necropsy findings in the enormously enlarged lymph-nodes in the neck, chest, mesentery, etc., were apparently of lymphomatous nature. Microscopic examination alone revealed the structure of metastatic adenocarcinoma, and search for the primary cancer revealed it in the prostate. The patient was a farmer of about 70.

Norsk Magazin for Lægevidenskaben, Christiania

July, LXXIV, No. 7, pp. 881-1024

172 Leprosy as a Factor in Mental Disease. (Kan radesyken tilægges nogen betydning i vore sindslidelsers ætiologi?) J. Henrichs.
173 Physical Examination after Skating and Running Races. (Lægeundersøkelse ved Old Boys skøitekapløp.) H. Daae. (Undersøkelser av deltagerne i 50 km. løpet.) P. Torgersen.
174 Congenital Heart Disease; 15 cases. (Medfødte hjertefeil.) K. Motzfeldt.
175 From the Seat of War. (Krigskirurgiske demonstrationer.) S. Widerøe.

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THE LOCAL SPECIFIC THERAPY OF INFECTIONS *

I. THE BIOLOGIC BASIS

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Infection is a contest between two opposing forces: one the invading parasite, the other the resisting host. It is a struggle between two contestants, each displaying great resourcefulness and consummate skill. I propose to lay before you the main facts of this combat in so far as they have been worked out and to draw from them a deduction looking to the better control by improved therapeutic methods of the issue of infection.[1]

The properties of living things are not fixed, but are subject to certain and sometimes fundamental fluctuations. What are described as biologic variations arise among the very lowly bacteria and protozoa as among the higher types of plant and animal life.[2] The character of the variations differs merely because of the minute size and the simplicity of structure of the micro-organisms, while the variations themselves are for the same reasons made more difficult to detect. But they can, nevertheless, be followed accurately both in their cultural qualities and immunity reactions; and it has been found that these variations play a significant part in respect to the specific treatment of disease.[3]

The microbic causes of disease are subject to a wide play of essential properties, in part spontaneously, as we say, and in part in response to certain definite experimental conditions. The resultants of the changed conditions are new varieties or forms that retain the new characters for indefinite generations and suffice often to constitute new species.

Thus bacteriologists who have occupied themselves with the study of the group of dysentery bacilli or the wider class of colon and typhoid bacilli now find support for the conviction long held that within these groups genetic relationship among the members exists; and while no one has actually as yet succeeded in converting the dysentery bacillus F into the bacillus Y, and while it may still be doubted, notwithstanding the statements to the contrary, that a typhoid bacillus has been experimentally converted into a paratyphoid bacillus, yet it is nevertheless true that certain colon bacilli regularly undergo changes and develop new special properties quite as fundamental as those that distinguish from each other the types of dysentery bacilli and the typhoid and paratyphoid bacteria.[2]

Moreover, many bacteria are sensitive to chemical poisons to which they may, however, be adapted; and the new strains produced often retain the power to grow in the presence of the poisons even after long being separated from them.[4] When it is recalled that the bacteria often pass through many generations within twenty-four hours it will be seen that this quality of chemical resistance is transmissible to an indefinite series of offspring. It also happens that chemical resistance produced to one poison, such as arsenic, may lead to the simultaneous development of resistance to another, such as antimony; and it has further been ascertained that this power of chemical resistance in artificial cultivations may be retained even when the altered bacteria are returned to the animal body.[5]

The bacteria and protozoa show even more fundamental variations in relation to immunity reactions. Inagglutinable strains of bacteria have long been known as occurring in nature, and similar strains have been produced from previously agglutinable ones by artificial methods of cultivation. In nature, moreover, certain micro-organisms, among which may be mentioned the pneumococcus, streptococcus and the trypanosome of sleeping-sickness, exhibit variations of chemical and immunity reactions that serve to separate them into definite classes or types which, as will be shown, play a highly important part in respect to the specific therapeutics of the infections they cause.[6]

We have now seen that variations in properties among micro-organisms may be native or they may be developed by artificial conditions of growth. It remains to add that new varieties also arise among parasitic microbes developing within the body of infected animals. Thus, such micro-organisms as the malarial parasite, the trypanosome of sleeping-sickness and the spirochete of relapsing fever or syphilis, may, as a result either of the processes of spontaneous recovery, or of induced healing by chemical drug or specific serum, suddenly acquire a state of resistance to the curative principles and become no longer subject to their influence. This state of resistance

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* This is the first of two lectures which as here presented are based on the Harben lectures of 1912 given before the Royal Institute of Public Health, London, and the Trimble Lectures of the Medico-Chirurgical Faculty of Baltimore of 1913.

[1] Flexner: Arch. Pediat., 1908, xxv, 780; The Biologic Basis of Specific Therapy, Boston Med. and Surg. Jour., 1911, clxv, 709; The Local Specific Treatment of Infections, Harben Lectures, Jour. State Med., London, 1912, xx, 130, 193, 257.

[2] Müller: Bakterienmutationen, Ztschr. f. induk. Abstamm. u. Vererbungs., 1912, viii, 305.

[3] Neufeld and Händel: Ueber Herstellung und Prüfung von Antipneumokokkenserum und über die Aussichten einer spezifischen Behandlung der Pneumonie. Ztschr. f. Immunitätsforsch., Orig., 1909, iii, 159. Ehrlich: Ueber Chemotherapie, Centralbl. f. Bakteriol., Abt. 1, Referate, 1911, l, Supplement, p. 94.

[4] Marks: Ueber einen arsenfesten Bakterienstamm, Ztschr. f. Immunitätsforsch., Orig., 1910, vi, 293.

[5] Seiffert: Studien zur Biologie der Darmbakterien, Deutsch. med. Wchnschr., 1911, i, 1064.

[6] Neufeld and Händel: Ueber Vorkommen und Bedeutung atypischer Varietäten des Pneumokokkus, Arb. a. d. k. Gsndhtsamte, 1910, xxxiv, 293. Ehrlich: See Footnote 3. Lamar: Chemo-Immunologic Studies on Localized Infections, Jour. Exper. Med., 1912, xvi, 581. Spiess: Die Anwendung von Antistreptokokkenserum (Höchst), per Os und lokal in Pulverform, Deutsch. med Wchnschr., 1912, xxxviii, 207.

has come to be spoken of as "fastness," and its recognition has thrown a new and penetrating light on the troublesome and often very serious relapses that appear in the course of infectious diseases.[7]

In the healing of infectious diseases by Nature, as we are wont to say, we now recognize that the microbic causes are gradually or even suddenly suppressed through the development by the body of immunity principles capable of bringing about their destruction through dissolution or phagocytosis. When healing is promoted by remedies such as the specific serums, the immunity reaction of the infected body is merely anticipated by the artificial injection of the serum. When, on the other hand, curative drugs are employed, the action is somewhat more complex. Under these circumstances the suppression of the microbic causes of the disease is accomplished partly by the action of the drug and partly through the immunity principles developed from the parasites brought to destruction by the drug.[7]

This interaction of chemical substance and specific antibody, through which the parasites are brought to destruction, is a desirable process, since it insures not only prompt recovery from infection but also security against reinfection. Experience has abundantly shown that Nature's mode of cure of many of the infections is perhaps slow, but, none the less, possesses the great merit of affording *an enduring protection against* another attack of the same malady. This is the reward of a gradual process of immunization that leaves the restored body amply armed with actually or potentially ready immunity principles that suffice to ward off impending infection.[8] When recovery is assisted by the employment of artificial immune serums the body, probably, is left in much the same state of preparation, while the effect of healing drugs is determined by the precise nature of their influence on the microbic causes of disease and varies according as the resulting dissolution products are not altered chemically beyond the point at which antibody formation is still possible.

Under the older conditions of the treatment of syphilis with mercury, instances of reinfection were rare and commonly disputed. Under the new conditions of treatment with the far more vigorous salvarsan, reinfection indisputably occurs. This disparity is undoubtedly to be attributed to the different responses by antibody formation to the destroyed spirochetes under the two modes of chemical action[9]; and while at first glance the older method appears to possess advantages over the newer, there are, as a matter of fact, offsetting conditions that quite change the situation.

Not a few infections, and those particularly that pursue a chronic course, are characterized by a tendency to recrudescence or relapse in process of recovery. This condition is commonly observed in malaria, spirochetal infections, trypanosomiasis and tuberculosis. It also appears with less regularity among many other infections. Excluding tuberculosis from present attention because of the lack of knowledge of transformation in type of tubercle bacilli within the body, we may consider what happens when relapses take place in the remaining infections. It is common knowledge that in the course of treatment of malaria with quinin a state of excessive resistance of the parasite to the drug sometimes arises. In the treatment of trypanosomal and spirochetal infections similar resistances are encountered. Indeed, so commonly has this phenomenon been observed, in the course both of spontaneous or natural infections, so-called, of man and animals and in the experimental ones as well, that the corresponding relapses are now *recognized as a characteristic* of the clinical characters of the diseases concerned.

Painstaking study has yielded an explanation of the cause of the resistance among the parasites on which the relapses depend. The resistant parasites are variants of the normal species produced artificially in the course of treatment by antibody or by drugs. The variations induced may persist indefinitely and be transmissible. According as the parasite affected is capable of appearing in few or many relapse forms, so-called, the corresponding diseases are attended by few paroxysms, as in relapsing fever, or many, as in malaria or syphilis. Ultimately the complete suppression of the infecting cause is due, when it is accomplished, to the development within the host of as many kinds of antibodies as relapse types of the parasite occur.

Hence in considering the problem of the therapeutics of infection we must take into account the fact that the parasites possess an advantage of regulation within themselves to preserve them from extinction, through which they alter rapidly, not their form and external appearances so much as their chemical characters, when too closely pressed and menaced. And this change consists in the development of a state of resistance or "fastness" to injurious chemical bodies, whether the immunity principles of the blood or still other substances.

It is true that the active termination of infections through the unassisted elaboration of specific protective principles by the infected body probably oftener secures to the host an enduring immunity than does the more quickly induced passive termination through the operation of artificial healing substances; for in the first instance the variety of antibodies evolved may equal all the possible number of normal and fast strains to which a given microbe is subject and thus a more perfect protection be secured. A specific treatment that destroys the parasites, not at one blow, but successively may, however, bring about a similar result, since, although each succeeding group of parasites yields less easily, yet in succumbing it gives rise to a new variety of antibody. Against the advantages of producing by a slow process an enduring immunity or recovery, however, must be weighed the danger of fast strains arising that may prove impossible of destruction with any known means whatever. From the point of view of effective therapeutics it is thus clearly desirable to terminate the infection quickly and diminish the risk involved. To accomplish this result several factors must cooperate: the specific chemical or serum must not only be suitable but also come to act on the parasitic causes of disease in such degree of concentration as to insure the maximum effect. It has been shown for trypanosomal, meningococcal and streptococcal infections that the higher the concentration of the specific immune serums about the corresponding parasites the greater is the assurance of their complete destruction.[10]

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[7] Ehrlich: Ueber Chemotherapie, Centralbl. f. Bakteriol., Part 1, Referate, 1911, l. Supplement, p. 94. Rosenthal: Experimentelle Untersuchungen über des Wesen und die Genese des Rezidivs Ztschr. f. klin. Med., 1913, lxxvii, 161.

[8] Flexner: The Biological Basis of Specific Therapy, Boston Med. and Surg. Jour., 1911, clxv, 709.

[9] Schilling, von Krogh, Schrauth and Schoeller: Die Wirkung organischer Quecksilberverbindungen bie Spirochäteninfextionen. Ztschr. f. Chemotherapie, Orig., 1912-13, I, 21. Antoni: Sieben Fälle von Reinfectio syphilitica und Betrachtungen über schwere salvarsan-intoxikationen, Deutsch. Med. Wchnschr., 1913, xxxix, 508.

[10] Ehrlich: See Footnote 7. Flexner: A Serum-Therapy for Experimental Infection with Diplococcus Intracellularis, Jour. Exper. Med., 1907, ix, 168. *Flexner and Jobling: An Analysis of Four Hundred Cases of Epidemic Cerebrospinal Meningitis Treated* with the Antimeningitis Serum. Jour. Exper. Med., 1908, x, 690. Neufeld a[illegible] *zur kenntnis der* "antiaggressiven" Sera. Arb. [illegible] 1912, xl, 1.

There is still another consideration that merits attention. Hitherto we have employed curative serums or drugs separately, and not in conjunction, to support and supplement each other. Since in the course of their curative action the specific drugs are assisted in the destruction of parasites by antibodies, the artificial combination of specific drug and specific antibody should offer definite therapeutic advantages. One of the advantages to be gained by enlisting more than one antagonistic agent against the pathogenic micro-organisms results from the circumstance that an antibody or drug will operate with greater effect against an already injured than against a normal parasite, and, next, because mutation in several directions is less readily achieved than in the one direction. Hence a fortunate union of serum antibodies and suitable chemical substances affords, in theory at least, a favorable means of suppressing infection. That this is not merely a fancy, but has already been verified by experiment, it will be part of the next lecture to show. But just as the availability of every chemical substance is determined by the manner of its distribution in the body, and that in turn is decided by facts of chemical and physical affinity for particular tissues and cells, so will the utilization of combinations of different therapeutic agents depend on the completeness with which they can be made to act together in the manner designed. This requirement might be met either by happy accident, once the joint bodies are introduced into the blood and allowed of their own affinities to seek together the places at which their action is to be manifested, or by intent, when they are introduced purposely directly into the seats of disease.

Having accomplished so much we must look forward as a next step to the greater perfection of immune serums themselves. By taking into account the natural types or races of pathogenic micro-organisms, each with its definite specificity, and perhaps also the fast strains artificially produced, new and more effective bactericidal serums may be produced. In the past an effort has been made, but imperfectly, to develop polyvalent serums by employing for immunization purposes many different strains of a given micro-organism; but increased knowledge has shown that this method may or may not succeed, according to whether in the choice of cultures racially dissimilar strains have or have not been secured; for an immune serum prepared with one racial strain will be effective against all samples of that strain and wholly ineffective against all members of another strain, and vice versa. The problem, therefore, is first to adapt the serum or chemical to the particular strain of infecting micro-organism and then to insure its maximal effect by direct application to the seat of infection.

It should now be apparent of what high importance in respect to the specific treatment of microbic disease is this phenomenon of variation among micro-organisms, which earlier I compared to mutation among the higher plants and animals. The variations among the bacteria and protozoa occurring in external nature, or produced in test-tubes, or appearing under the influence of drug or antibody acting within the infected animal, arise often with startling rapidity. They are therefore in essence identical with those alterations of character that constitute mutation among the higher living organisms. But there remains, possibly, still another way in which this phenomenon may operate to cause disease. The realm of microbiology includes the subject of epidemiology or the science of the nature of the causes accountable for epidemics of disease. The data of epidemiology, because of their inherent complexity, are still few and uncertain. Now I wish to suggest that those remarkable and often sudden accessions of virulence in micro-organisms that determine devastating epidemics may have their origin in mutational modifications affecting particularly their pathogenic or disease-producing power. We have recently witnessed manifestations of sudden accession of disease-producing power, which have resulted in pandemics of meningitis and poliomyelitis, that within ten years have twice encircled the globe; and, in a somewhat more restricted field, severe outbreaks of milk-borne streptococcus infection prevailing in Baltimore, Boston and Chicago and claiming many victims. Imperfect as our knowledge is of the relation between cultural conditions and the rise of virulence, nevertheless evidence exists tending to show that plague bacilli[11] in artificial culture may suddenly take on a heightened pathogenic power, and streptococci growing in milk as suddenly assume the cultural peculiarities of the special micro-organism responsible for the epidemics of so-called streptococcal septic sore throat.[12]

Turning now to another aspect of our theme, namely that of local therapy, it should first be stated that the idea of specific treatment of disease is not a new invention, although the significance of the term to-day is wholly different from that previously current. The discovery of specific drugs for combating disease is not a new achievement. Cinchona bark and its alkaloidal constituents and the compounds of mercury are as specific therapeutic agents as the latest product of the biochemical laboratory. But the manner of attacking the problem of the cure of disease is wholly different to-day from what it was in the past. The place of chance and empiricism which ruled the earlier quest has been taken by knowledge, in many ways and cases accurate and full, concerning the nature of the causes of the infectious diseases and the means of their suppression. It is, indeed, to the acquisition of this fund of knowledge that we owe the more rapid advances being made and the hopefulness with which the immediate future of discovery in the domain of specific therapy is being viewed. Having now considered some of the shifts adopted by the parasites to accomplish the ends of infection we may turn with profit to an examination of the means employed by the animal body in resisting their effects.

Immunology and experimental therapeutics have established the chief factors on which recovery from infection rests. All are in last analysis chemical reactions that are performed with varying reagents consisting of antibodies, phagocytes and specific drugs, acting separately or together. Probably the antibodies and phagocytes always cooperate and in many instances certainly, if not in all, the antibodies, phagocytes and drugs as well. Recovery from infection, therefore, is brought about through suppression of the microbic causes either by biologic antibodies evoked within or by drugs introduced from without the body. The antibodies, it is well known, consist of several sets of definite substances named cytolysins, agglutinins, precipitins, opsonins, etc., beside which are to be placed the essential leukocytes or phagocytes whose part in the drama is not less conspicuous. You are aware, moreover, that at best the antibodies are but slightly represented in the healthy body and are produced anew either wholly or largely in the infected one; while the quality of the phagocytes is not noticeably altered, although their number is often increased and their activities are frequently excited through new antibodies, such as opsonins, which are elaborated.

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[11] Gotschlich: Allgemeine Morphologie und Biologie der pathogenen Mikroorganismen, in Kolle-Wassermann: Handbuch der pathogenen Mikroorganismen, 1911, i, 167.

[12] Davis: Bacteriologic Study of Streptococci in Milk in Relation to Epidemic Sore Throat, The Journal A. M. A., June 15, 1912, p. 1852.

The antibodies, or immunity principles, as they are also called, are detected in the blood, although produced in the bone-marrow, spleen and lymphatic tissues generally. The quantity existing in the blood is taken as a measure of their potency, although in a few known instances efficient immunities exist without the presence of demonstrable corresponding antibodies in the blood. The immunity principles, however, and the phagocytes that act along with them in defense of the integrity of the organism, pass from their sources of production in the organs into the blood, from which they endeavor to reach the special locations of the infective microbes which they are designed to overcome.

In identical manner the curative serums prepared artificially in animals and the specially fashioned specific drugs that are introduced into the body from without are so placed as to reach as directly as possible the circulating blood, which is to become the purveying medium to the rest of the body. We are obliged, therefore, to take account not only of the nature but also of the manner of distribution of parasitic micro-organisms within the infected body, either as they occupy the blood, when they can obviously be brought immediately under the influence of the curative agents, or as they are confined in the tissues or segregated in a remote cavity where they cannot be reached so directly. In the latter instances they can at best come under the influence of the lymph that in process of being separated from the plasma of the blood carries away from the latter part of its various dissolved ingredients.

It is the lymph which contains the protective, as it does the nutritive, principles for tissues and organs, and hence this fluid provides the essential safeguard against infection. The protective principles are not known in the pure state, but there are excellent reasons for regarding them as protein in nature and as composed of compounds of high molecular size. Hence they partake of the physicochemical and osmotic limitations of this class of compounds.

Their relation to the lymphatic fluids is of high importance as affecting the problem of infection. We know that the perfected antibodies do not persist indefinitely within the blood. When they are introduced passively by injection the quantity begins to diminish until at the expiration of a few weeks or months, and more quickly in the case of injected foreign (heterologous) than of native (homologous) serum, they have wholly disappeared. The manner of their disappearance is still undetermined, but little appears to be excreted unchanged, while the greater quantity would appear to be metabolically transformed. On the whole, assuming the principles to be protein matter, it is remarkable that they should resist the metabolic processes so well. Their capacity to pass into the lymph is of even greater significance. Since they partake of the nature of the proteins, we should expect them to be similarly affected by the varying compositions of the lymph in different regions of the body. It is common knowledge that the quality of the lymph in the serous cavities and in the cellular tissues is not equal. While the lymph taken from a large lymph-vessel or cavity of the spermatic cord may approach in protein content that of the blood, the lymph yielded by the serous cavities is more dilute than blood-serum, and, moreover, the fluids of the several cavities vary among themselves within wide limits. In one individual and under identical conditions of production a lymphatic transudate in the pleura may show in a thousand parts twenty of protein, in the peritoneum eleven, and the cerebrospinal membranes six. Whatever the anatomic conditions are on which this difference depends, its physiologic significance is at once apparent. We have only to discover that relationship exists between the protein and the antibody content of the several fluids to arrive at the important deduction that the chemical composition of the lymph is a deciding factor in the issue of infection.

Our knowledge of the quantity of immunity principles present in the lymphatic fluids as compared with the blood of the same individual is still imperfect, and yet its meaning is unmistakable. We can take as indexes of the general content in protective principles the amounts of agglutinin and hemolysin that have been shown to occur in different transudates. Under conditions in which the agglutinin for the typhoid bacillus exists in the blood it has been found absent from the lymphatic fluids in the peritoneum, pleura and pericardium.[13] Hemolysin, antihemolysin and complement have all likewise been ascertained to be absent altogether or to be present in diminished and fluctuating amounts in the several transudates and exudates occurring in these cavities; and it is highly exceptional for any at all to exist in the cerebrospinal liquid.[14] Furthermore, a relation has been established between the total nitrogen, as determined by the Kjeldahl method, and the quantity of immune bodies present in the fluids, a circumstance that in itself shows how intimately these substances are bound to the protein moiety of the lymph.[13]

It is known that the substances which cause agglutination offer a certain resistance to diffusion *in vitro;* and in the living organism it is certain that the phenomena surrounding diffusion are far more complex than in dead membranes, and the passage of different dissolved elements of the plasma into the humors and secretions is not explained solely by simple dialysis. The very fragile barrier of the placenta is sufficient to arrest the passage of agglutinin from the mother into the fetus. The mechanism that provides for the secretion of the tears, saliva and urine permits little or no agglutinin to pass; while that which brings about the secretion of milk secures at the same time the passage of immunity principles of varied sorts and in quantities that approach or even equal the amounts existing in the blood.[15]

As it is the protein, and in particular the globulin fraction of the lymph which carries the immunity principles, it follows that the several lymphatic fluids will determine the degree to which the serous membranes and other parts are supplied with them, and that the subarachnoid spaces of the central nervous system will be least well supplied of all. This consideration must be of high importance as affecting the provision for warding off and later controlling and abating an infection. Since the anatomic structure decides the quality of the lymphatic fluid in health it also determines it in disease; and by regulating in the first instance the composition of the fluid and, in the next, the extent of the lymphatic interchange, it commands the issue of the pathologic process.

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[13] Levy and Gissler: Untersuchungen über Typhusserum. München. med. Wchnschr., 1897, xliv, 1435.

[14] Strauss and Wolff: Ueber das hämolytische Verhalten seröser Flüssigkeiten, Fortschr. d. Med., 1902, xx, 1, 209. Lüdke: Ueber Hämolysine und Antihämolysine in menschlichen Transsudaten und Exudaten, Centralbl. f. Bakteriol., Orig., 1907, xliv, 268.

[15] Archard and Bensaude: Sur la présence de la propriété agglutinante dans le plasma sanguin et divers liquides de l'organisme. Compt. rend. séances de l'Académie des sc., 1896, cxxiii, 504.

Under such conditions parasites which have become localized in inaccessible or not readily accessible regions are insured a potential advantage against the host; and this advantage is strengthened by the circumstance that, as they multiply within a confined area to which the lymph has not ready access, they exhaust the immunity principles originally present. Hence the sufficiency of the immunity principles is determined not only by intrinsic qualities of parasite and host, but also, in high degree, by the manner of location and distribution of the parasites themselves within the infected host. Whether the parasites have a general distribution throughout the blood and tissues, or are confined within a pathologic process in the interior of an important organ, may be the factor deciding not only whether the native curative principles shall gain ready access to them, but also whether or not extraneous curative substances introduced from without into the body shall be able to reach the seat of disease.

In the course of the struggle for survival, therefore, the parasites withdraw at times into situations which are reached imperfectly and with difficulty by the lymph, and thus they produce local inflammations more or less cut off from the general circulation and the curative agents purveyed by the blood. This is the condition encountered in massive inflammations, in abscess formation and in infections of the serous cavities receiving a modified and diluted lymph secretion.

Manifestly, therefore, the bringing of the causes of microbic diseases under the influence of healing substances will be more readily and certainly accomplished when the parasites are widely disseminated throughout the body than when they are hidden away within an organ or in the interior of a cavity. Hitherto the most effective specific curative agents have been just those that operate against the generalized infections, of which quinin in its action against the malarial parasite affords an example; while the control of diphtheria by antitoxin, perhaps the most perfect example of all, consists essentially of the neutralization of a universally distributed poisonous or toxic substance that is directly the source of the serious effects of the disease. When in generalized infections the surviving micro-organisms escape from the blood to aggregate in special situations and local pathologic products that are not readily reached by the lymph, then the specific drug or serum asserts its curative power with far more difficulty and far less certainty.

Special aggregations of this kind, more or less inaccessible to the circulating healing principles, are gummatous formations and the still other special localizations of the syphilitic virus that occur in locomotor ataxia and possibly in paresis, the trypanosomal cause of sleeping-sickness when confined in the central nervous system, the pyogenic bacteria contained within large collections of pus-cells, tubercle bacilli enclosed in caseous foci, and many other instances that suggest themselves. When obliterating disease of the arterial system exists, as in certain tuberculous, syphilitic and other focalized lesions, the ability of the healing principles to penetrate into the pathologic lesion is still further diminished.

No part of the body is, as has been seen, so isolated anatomically and physiologically from the contents of the blood as are the subarachnoid spaces of the central nervous system, in consequence of which pathologic states affecting the meninges and the adjacent central nervous tissues that depend on the fluid contents of these membranes for food and protection are especially difficult to bring under the influence of curative substances. It has been found far easier, for example, to abolish by specific drugs the trypanosomal cause of sleeping-sickness in the blood and lymph-nodes than in the cerebrospinal liquid. And we are just learning that in tabes, and shall probably learn that in paresis also, it is the special localization of *Spirochaeta pallida* in the central nervous tissues in situations accessible to the craniospinal fluid, rather than to the blood, that has so largely determined the failure of almost every effort to combat these now established syphilitic affections by the usual antisyphilitic remedies.[16]

Without entering into discussion of the question in how far the cerebrospinal fluid constitutes the lymph of the central nervous system, we may yet consider with Mott[17] that it completely occupies the subarachnoid spaces and communicates with a canalicular system surrounding the vessels and nerve-cells of the brain and spinal cord. This liquid should therefore provide the most direct path for the penetration of active substances to the nervous tissues. Pharmacologic tests have demonstrated the existence of such a system of communication. Thus, while it has been abundantly shown by experiment that many active substances *present in the blood* are successfully excluded from the craniospinal fluid, it has also been found that when they are introduced into it directly the effects produced on the nervous organs are particularly severe. Many examples might be given in illustration, but only one will be cited.

Behring found the hen not subject to the effects of tetanus toxin injected into the blood and highly subject to its action when it was injected directly into the subarachnoid spaces. Of the many different drugs tested certain nitrites pass in small amounts the barrier of the chorioid plexus to gain access to the cerebrospinal fluid, while hexamethylenamin (urotropin) alone passes the barrier freely. It appears that after the intravenous, but not after the intramuscular, injection of salvarsan detectable quantities of arsenic appear quickly in this fluid and as quickly disappear.[18] The intact chorioid plexus therefore exercises a high degree of control over the composition of the cerebrospinal fluid. The fluid itself readily escapes into the general blood and apparently by way of direct anatomic communications existing between the subarachnoid spaces and the veins. Evidence is lacking of a similar direct communication with the lymphatic system.[19] From this it follows that while the composition of the cerebrospinal liquid is little subject to influence through the components of the blood, it readily yields to the blood all that it contains. When the meninges and the chorioid plexus are acutely inflamed, the cerebrospinal fluid receives from the blood an increase of protein matter and thus probably any associated immunity principles which the blood contains. It appears, however, that the principles remain in the meninges only a short time and exert little neutralizing effect on poisons or microbes.

It must now be evident that the solution of the problem of specific treatment of disease is bound up in no small way with the problem of the segregation of the parasitic causes of infection in relatively inaccessible portions of the body. Hence, the recommendation which I bring forward is that of a more direct mode of attack on the local processes of infection that are not readily, or at all, to be reached by the introduction of curative agents into the blood. It is patent that a method enabling the healing substances to be delivered in and about the seat of disease and made to exercise their effects on the parasites, not through a diluted lymph secretion, but in such a state of concentration and combination as experiment and experience proves in given instances to be useful, offers high hopes of success. So far as the surfaces of the body are concerned the method of local treatment, generally considered, is time-honored; but even with the infections of these surfaces it has been too little practiced. In the second lecture I shall present evidence bearing on the advantages that may be gained from a wider adoption of the practice of specific local therapy.

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[16] Swift and Ellis: The Direct Treatment of Syphilitic Diseases of the Central Nervous System, New York Med. Jour., 1912, xcvi, 53. Wechselmann, Ueber intralumbale Injektion von Neosalvarsan, Deutsch. med. Wchnschr., 1912, xxxviii, 1446.

[17] Mott: The Oliver-Sharpey Lectures, On the Cerebrospinal Fluid, Lancet, London, 1910, ii, 79.

[18] Sicard and Bloch: Perméabilité meningée à l'arsénobenzol, Compt. rend. Soc. de biol., 1910, lxix, 624.

[19] Dixon and Halliburton: The Rapidity of Absorption of Drugs Introduced into the Cerebrospinal Fluid, Proceedings of the Physiological Society, Jour. Physiol, 1912, xliv, p. vii.

I have now briefly and, I fear, inadequately presented the main facts that have to be taken into account in the working out of a system of specific therapy of the infectious diseases. If I have inspired a depressing sense of hopelessness in the quest I have failed in my purpose. It is indeed true that while we have been fascinated with admiration for the wonderful forces possessed by the higher animals for warding off and abating infections, we have perhaps been slow to realize that the parasites themselves must be provided with correspondingly perfected adjustments with which to resist these mechanisms. These adjustments have now been, in part at least, uncovered. The result is that we enter on the task of the perfection of artificial means of strengthening the body's defenses and power of overcoming parasitic microorganisms not with a lessened, but with an increased, feeling of confidence in the issue. To phrase such a problem too simply is to court failure and discouragement; to clothe it in all the facts, without regard to their complexity, is to inspire hope and perchance to win success.

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OVERRESPONSE TO AFFECTIVE STIMULI FROM STATIONARY CORTICAL LESIONS

WITH REPORT OF A CASE*

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An investigation of sensory phenomena resulting from lesions occurring at any level of the nervous system is ordinarily of much interest and is attended with difficulties which in many instances are not easily surmounted. I believe that symptoms resulting from disturbances of the various components of sensation are the hardest symptoms in medicine to interpret, and consequently are the least understood.

After the sensory impulses undergo a regrouping at the first synaptic junction in the spinal cord they ascend in tracts according to quality. All impulses of a painful and thermal character cross over immediately, enter the contralateral spinothalamic tracts, and ascend in secondary fibers of the spinal level.

Those impulses evoking sensations of postural recognition and spatial discrimination ascend in primary fibers of the peripheral level in the ipsolateral dorsal tracts are regrouped in the spinomedullary nuclei, cross over and ascend through the brain-stem in the contralateral mesial fillet.

Impulses evoked by tactile stimuli traverse the cord in the ipsolateral dorsal tracts and the contralateral spinothalamic tracts. It is for this reason that unilateral cord lesions do not cause a loss of tactile sense over any part of the body.

We thus see that the various components of sensation are grouped in the spinal cord and brain-stem and traverse, according to quality, separate paths. On reaching the optic thalamus they are all of whatsoever quality grouped together in the external nucleus. In this organ they undergo a characteristic and definite regrouping. Those which evoke in consciousness sensations of pleasure and discomfort pass by fibers of the thalamic level into the gray matter of the thalamus in the internal nucleus. After acting on the essential center of the thalamus, sensory impulses are conducted by fibers of the cortical level, in five main groups, through the internal capsule and sensory radiation to that portion of the cortex between the precentral convolution and occipital lobe.

Head groups these sensory impulses as follows:

1. Those which underlie postural recognition and the appreciation of passive movement. On this group depends the secondary faculty of judging the differences or identity of two weights placed on the unsupported hands.

2. Impulses which underlie the recognition of tactile differences or the power of appreciating those qualities of touch other than contact and roughness. To this group we owe the faculty of recognizing the increase or diminution in weight of a test object, and of distinguishing the difference between two weights placed on the supported hand.

3. Those on which depend spatial discrimination (compass points applied simultaneously) and its allied faculty, the recognition of size and shape.

4. Those impulses which enable the patient to recognize the spot stimulated (localization). They carry with them the power of appreciating the double nature of two points applied to the surface one after the other.

5. Thermal impulses. On this group depends the possibility of recognizing those degrees of temperature which necessitate a comparison with the consequences of some previous sensation.

We recognize two masses of gray matter or sensory centers in which impulses tend to evoke that psychic state called a sensation. One of these is situated in the internal nucleus of the optic thalamus, the other in the parietal region of the cerebral cortex. Anatomically, the optic thalamus is very complex and plays a threefold part in the fate of all sensory impulses. It contains the termination of all sensory paths. The gray matter forms the center for certain fundamental elements of sensation and is under control of the cortex through the corticothalamic fibers which terminate in the external nucleus, and its activity is checked and regulated by corticothalamic impulses.

Roussy,[1] Holmes and Head,[2] Edinger[3] and various others have correlated the symptomatology with the anatomic findings at necropsy, in lesions of the optic thalamus, and Roussy in 1907 formulated the thalamic syndrome, which is as follows:

1. A persistent loss of superficial sensation of one-half of the body and face. This loss to touch, pain and tem-

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[1] Roussy, G.: La couche optique, Paris, 1907.

[2] Holmes, Gordon, and Head, Henry: A Case of Lesion of the Optic Thalamus with Necropsy, Brain, 1911, xxxiv, 255.

[3] Edinger, L.: Giebt es central entstehende Schmerzen? Deutsch. Ztschr. f. Nervenh., 1891, i, 262.

perature is more or less definite, but the loss of "deep" sensibility is always more pronounced.

2. Slight hemiataxia and a more or less complete astereognosis.

3. Acute pains on same side, persistent, paroxysmal, often intolerable, and yielding to no analgesic treatment.

4. Slight hemiplegia which produces no contracture and rapidly passes away.

5. Choreic and athetotic movements in the limbs of the affected side.

In addition to this symptomatology Head[4] and Holmes have demonstrated a symptom of much interest and value which constantly occurs in those cases in which the lesion disturbs the anatomic integrity of the external nucleus but does not destroy the internal nucleus. This symptom is known as overresponse to affective stimuli. The essential feature of these cases is a greater intensity of feeling tone over the contralateral half of the body to all stimuli which are agreeable or disagreeable in quality. Thus painful prick is more painful over the affected than over the normal side. The same is true of painful pressure. Discomfort caused by heat or cold is also greater over the affected side. This is true even though there be no thermal threshold differences between the two sides. Visceral stimulation produces discomfort in its purest forms, and in these cases the sensation evoked is more disagreeable in character, when the testicle of the affected side is squeezed than when the same amount of pressure is applied to its fellow. If the skin of the sole and palm is scraped with the finger-nail or a rough object is moved over the skin, or the tuning-fork is applied to the affected part, the degree of discomfort is much greater than that resulting from the same stimuli on the normal side. Tickling is normally not unpleasant; but when the tips of the fingers are moved over the palms or soles or cotton wool is rubbed over hair-clad parts on the affected side, the sensation evoked is extremely disagreeable. In these cases sensations of a pleasurable nature, such as pleasurable warmth, are more pleasant on the affected than on the normal side. Head has also demonstrated that the affected half of the body responds more intensely to mental states of pleasure and discomfort; thus, sensations evoked by painful emotion are more disagreeable and those evoked by pleasurable emotions are more pleasant on the affected than on the normal side.

Lesions of the cortex involving the sensory area present a symptomatology essentially different from that of lesions of any other part of the nervous system. The spontaneous sensations are usually paresthesias and defective idea of the limbs of the opposite side. Spontaneous pains may be present in the limbs, but are usually absent. The tactile sense is always disturbed. The response of the affected side to graduated tactile stimuli is essentially variable and inconstant; sensation is never entirely lost to cotton-wool stimulation over hairless or hair-clad parts. With the smallest hair which evokes a constant response on the normal side we can obtain an occasional response on the affected side. Increasing the size of the hairs up to a maximum does not seem to increase the percentage of responses. With the pressure esthesiometer weighted with 2 gm. we obtain a constant response from the normal side but only an occasional response on the affected side. The percentage of responses over the same area of the affected side is not greater when the esthesiometer is weighted up to 40 gm. or more. There is also a tendency to hallucinate because of the continuation of the sensation after the stimulus is withdrawn, and a tendency to quick fatigue over the affected side. In all cases of cortical lesions which cause a disturbance of sensation, the recognition of posture and passive movement are grossly defective. This is due to defective knowledge of position and is greatest at the periphery of the extremities. The power of localizing the part touched or pricked on the affected side may not be impaired, but it is frequently disturbed and may be grossly so. The power of appreciation of two points applied to the skin simultaneously is constantly impaired, and no threshold at all can be established. In some cases the power of appreciating two points applied successively is also impaired. This is true whether the dull or sharp points of the compass be used. The ability to estimate the relative weight of two objects is readily disturbed by cortical lesions, whether the hand be supported or unsupported. Appreciation of size, shape and form may be entirely lost in some cases and retained in others. Appreciation of relative consistence and a recognition of texture are also usually defective. Affective components of sensation which show an overaction in the thalamic lesions are usually not disturbed by pure cortical lesions. Painful prick as measured with the prick algesimeter and pressure pain as measured with the pressure algometer, visceral stimulation, scraping, roughness, vibration and tickling as a rule are neither more nor less pleasant or unpleasant on the affected than on the normal side. In most cases thermal stimulation shows no threshold differences between the two sides, but there may be an increased neutral zone, a wider range of temperature in which the object feels neither hot nor cold. In other cases, however, an overresponse to affective stimuli may be manifested in cortical lesions. This occurs under two conditions. Monakow applied the term "diaschesis" to the state in which there has been a recent convulsion, an injury, operation or developing tumor of the cortex. In these states there may be an overresponse to affective stimuli, of an irregular and inconstant character. In discussing the optic thalamus, mention was made of the fact that the thalamic center is under control of the cortex through impulses which reach it by way of the corticothalamic fibers. When the external nucleus is disturbed by lesions, cortical control is interrupted and an overresponse of the thalamic center results. This condition has its analogy in the overaction of the lower motor neuron as manifested by increased and abnormal reflexes when cortical control is interrupted as the result of lesions of the upper motor neuron. If cortical lesions be extensive and involve the subcortical structures to such an extent as to interrupt the corticothalamic fibers, the contralateral half of the body shows the same symptoms of overresponse to affective stimuli as when the lesions interrupt these fibers in the external thalamic nucleus. The following case-report is illustrative of a lesion of this character:

History.—G. M., aged 34, a painter, single, entered the Kansas City General Hospital Feb. 15, 1913, complaining of partial paralysis of right side, morphin habit and occasional epileptic seizures. He gave his nativity as Pennsylvania. Family history has no bearing on present trouble. He had had the usual diseases of childhood; variola at 2 years; no other serious illness. He has used alcohol moderately, smokes, drinks coffee to excess and denies venereal history.

Eight years before the patient fell from a scaffold about 12 feet high; in falling he struck his head on the edge of an iron door, fracturing the skull, and was unconscious for eighteen hours; he was operated on immediately, a portion of the skull removed, and a metal plate inserted. Subsequent to the operation he developed a cerebral abscess about six weeks after the injury. The plate was removed, the abscess cavity was drained and a considerable quantity of brain tissue removed with the curet. Following this operation he began having convulsions about eight or nine days apart. He left the hospital at the end of three months, could use his hands reasonably well and continued to follow the occupation of painter. In August, 1911, in an attempt to cure his convulsions, another operation was done and a considerable quantity of skull and brain-tissue removed. While he was in the hospital this time morphin was administered to him regularly, and when he left the hospital he was using ¾ grain three times a day. Following this operation he has been unable to use his right hand, his convulsions continue to occur at intervals of about seven days, he has continued to use the morphin and at the time he came under my observation was using 3 grains three times a day.

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[4] Head, Henry: Sensory Disturbances from Cerebral Lesions, Brain, 1911, xxxiv, 171; Sensory Disturbances from Lesions of the Nervous System, Clin. Jour., 1912, xl, 408

Examination.—The patient was undersized, of moderate development. On left side of skull there was an area of depression about ¾ inch below the surface, 5½ inches long, and 2 inches wide. The anterior edge was 4 inches posterior to the base of the nose and the upper edge 1 inch from the median line. The fingers of the right hand were contracted and gross tremors and incoordination were manifest on the slightest movement of arm or hand. The movements of the eyes, left side face, left arm and leg were normal. The tongue was projected in the median line but nearer the right than the left labial angle.

The muscles of right face were not so active as the left and emotional expression was absent on the right. The right arm and leg were poorly controlled, incoordinated and spastic. The left hand registered 130 with the dynamometer but the right did not register. The muscles of the right hand and shoulder were slightly wasted from disuse. The convulsions usually involved the right arm and face, beginning in the thumb and then occurring in the face. Occasionally he had a general convulsion and when they became general he lost consciousness; otherwise consciousness was not impaired. The reflexes of the left side were normal in quantity and quality; those of the right arm and leg were considerably exaggerated. Ankle clonus, the Babinski toe phenomenon and various other plantar reflexes were present on the right.

The sensory examination revealed some interesting changes. The patient had a sensation of numbness in the right face, arm, hand, leg and foot. His idea and sense of position of right hand and foot were poor. His responses to light tactile stimulation as applied with cotton wool, the camel's hair brush and von Frey's hairs over right side were quite variable. He responded very intermittently to all these forms of stimulation. When the pressure touch was tested with the pressure esthesiometer, a more inconstant response was manifest. When this instrument was applied with a weight of 2 gm. over the affected areas, sensation was inconstantly evoked. An increase of the pressure by additional weights did not increase the percentage of responses, and no increase was manifested when the instrument was applied with a weight of 43 gm. The patient's sense of localization was tested by the Henri method as modified by Head and Holmes, and also by naming the parts touched, and was found to be greatly impaired over the right side especially the right hand and foot. When the tooth of the Graham-Brown esthesiometer was projected ½ mm. a sensation of roughness was evoked on the two sides.

The patient could distinguish between the relative roughness of 00 and ½ sandpaper equally well on right or left, indicating no threshold differences for this sensation between the two sides; but the sensation was more disagreeable on the right side.

Tickling and scraping evoked a much more disagreeable sensation on the right side than on the left. The vibrations of a tuning-fork were more disagreeable on the right than on the left, but the stimulation was perceived for an average of ten seconds longer on the left than on the right.

The compass sense was good over the entire left side. A threshold could be obtained over the right face but not over either of the extremities. The reaction to measured painful stimuli was normal on the left side, but when the prick algesimeter was applied with a weight of 2 gm. alternately to the two sides, the patient's expression indicated that the stimulus was much more painful on the right than on the left side and he stated that this was the case. There was also a marked lowering of the threshold for deep pain sense over the entire right side. The pressure algometer readings over the corresponding areas of the two sides were as follows, the numbers being given in kilograms of pressure:

Left scapula, 14; right scapula, 4.
Left deltoid, 12; right deltoid, 5.
Left palm, 8; right palm, 4.
Left anterior thigh, 16; right anterior thigh, 9.
Left tibia, 5; right tibia, 2.

The threshold difference for heat and cold varied as between the two sides. There was a considerable increase in the neutral zone on the right, and the sensation evoked by temperatures of a disagreeable character was much more disagreeable on the right than on the left. His sense of position was grossly impaired for the right extremities, and measurement of this defect by Horsley's method as modified by Head and Holmes showed an average variation from the normal of from 4 to 6 inches. The sense of passive movement was also greatly impaired on the right side. On measurement of the defect with the Gordon Holmes apparatus I found it necessary to abduct the right index 20 degrees, adduct it 15 degrees, extend it 6 degrees and flex it 40 degrees before a sensation of movement was perceived. A movement of the left index 2 degrees in any direction was readily perceived. It was necessary to flex the right forearm 20 degrees before the movement was recognized. The appreciation of weight in the right hand was not good, with the hand supported or unsupported. When a weight of 50 gm. was applied to the palm the patient said that he felt that something was touching his palm. It was necessary to increase the weight to 450 gm. before he could appreciate any increase whatever. He could readily differentiate between a weight of 30 and 50 gm. applied to the left hand either supported or unsupported. In the right it was not possible to establish a constant difference threshold, nor was it possible to establish a threshold difference for size. His appreciation of shape, form, consistence and texture was good in the left hand but absent in the right.

As stated before, I have presented this case as one in which the lesion was so extensive in area and penetrated so deeply into the subcortical structures as to interrupt the corticothalamic fibers, and interfere with cortical inhibition of thalamic activity. It may be correctly suggested that perhaps the rather frequent attacks of jacksonian epilepsy and occasional general epileptic attacks produced the unstable nervous state to which Monakow applied the term diaschesis, and that this state was responsible for the overresponse to the various forms of measured stimuli as indicated before. It has been my experience that in states of diaschesis the responses to these forms of stimuli have been variable and inconstant. I had this man under observation and saw him almost daily for a period of two months. I tested his sensation many times, and especially did I test, very frequently, with measured stimuli, the affective components. During many examinations made I found no variability or inconstancy of response, but on the other hand the responses were constant and unvarying in character, and correlating this fact with the extensive area and depth of the lesion, I believe that I am correct in assuming that the overresponse was due to overaction of the essential thalamic center deprived of cortical inhibition.

CLOUDY SWELLING

A PRELIMINARY REPORT *

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In 1852 and 1858 cloudy swelling was described by Virchow[1] as a condition in which a parenchymatous organ, such as the liver or the kidney, is swollen, more cloudy and of a more doughy consistency. In advanced stages the organ appears as though it had been boiled. Microscopically these gross changes are accompanied by swelling and increased cloudiness of the cells, the cloudiness being due to an increased number of albuminous granules in the cytoplasm. Virchow believed that cloudy swelling is of frequent occurrence and that it may be widely distributed in the body cells.

Virchow's classical description has persisted in the literature practically unmodified up to the present time. The statement is usually made that cloudy swelling is one of the commonest pathologic conditions encountered at necropsy; but notwithstanding the frequent occurrence of this condition and the apparent simplicity of its characteristics, it is probable that there is a considerable divergence of opinion among pathologists, especially in the identification of the less advanced stages. The reason for this is the absence of definite criteria from which to make judgments. It is difficult to be certain that an organ is swollen unless the swelling is considerable. Measurements of cells may of course be made, but these are open to numerous sources of error, so that only extensive and careful observations are of any value. Again one may find a very cloudy organ, or even one that is both cloudy and swollen, and yet hesitate to name the condition cloudy swelling because the pathologic change seems to be due to fatty metamorphosis or edema and not to an increase of albuminous granules. This uncertainty of diagnosis is not uncommonly felt in the examination of heart muscle. There seems to be no justification in the literature for the diagnosis of cloudy swelling unless the cells are swollen and turbid from an increase of albuminous granules.

In 1852 Virchow stated that the cells swell, become cloudier, less transparent, and more granular. He regarded the newly formed granules as albuminous in nature and apparently not different from those already present in the cell. His description is evidently based on the examination of fresh material.

In 1883, von Recklinghausen,[2] in discussing parenchymatous inflammation, stated that the cells become opaque by the deposition of protoplasmic granules, and that fat droplets then accumulate.

In 1889 Klebs[3] stated that the cells enlarge and assume a finely granular appearance, often plainer on the entire organ than on the individual parts.

In 1882 Cohnheim[4] saw in the cells fine or coarse granules which under normal relations are not present or at least are not so numerous. Cloudy swelling is easier to recognize grossly than microscopically in organs such as the liver, whose cells already contain granules.

Rindfleisch[5] in 1896 described cloudy swelling as a change of the cell protoplasm in consequence of which the cell becomes darker in transmitted light and more opaque in reflected light. It is due to a granular clouding and swelling of the parenchymal cells.

Benario[6] in 1891 emphasized the degenerative features of cloudy swelling. He stated that fat droplets are almost always present.

Thoma[7] in 1896 gave a clear and concise statement of his views illustrated by figures. In the human liver there are no coarse granules other than pigment shown. The cells that show cloudy swelling are larger and much more opaque than the normal and are all crowded with very fine granules in the fresh condition. Fresh normal liver-cells are also finely granular but they are clear, so that the nucleus is not obscured, the granules not being so numerous. In the cloudy swollen cell the nuclei are barely visible because of the large number of fine granules. In the kidney Thoma figures cloudy swollen cells that show the opacity and granulation in fixed and stained specimens. The granules in both liver and kidney cells are extremely small.

Ziegler[8] in 1897 characterized the histologic picture of cloudy swelling as fine granules in swollen cells. He illustrated with a section of kidney treated with ammonium chromate.

Birch-Hirschfeld[9] in 1896 and 1897 stated that the cells are enlarged and that fine weakly refractive granules appear in the protoplasm. In many cases fatty degeneration is associated. An illustration from a frozen section is given.

Ribbert[10] in 1911 described swollen cells with protoplasm more granular than normal, therefore less transparent and cloudier

Adami[11] in 1908 gave the following description of cloudy swelling: "On examining sections of the tissue, whether freshly cut, or after treatment with the ordinary hardening reagents, the individual cells are no longer so transparent as normal. They have a cloudy, ground-glass appearance, while, in well-developed cases, the nuclei look as though obscured by the deposit of a finely granular material in the surrounding cytoplasm, and stain more feebly than normal."

Von Gierke[12] in 1911 described the cells as finely granular and cloudy.

All of the foregoing observers apparently have studied human tissues. For the most part fresh tissues have evidently been employed; but Ziegler and Thoma describe the granular structure and opacity as still present after certain fixatives. Adami gives the appearance the same in fresh tissues as after treatment with the ordinary hardening reagents. But none of these observers imply that the granules they describe are in any way related to the Altmann granules.

Landsteiner[13] in 1903 studied fixed preparations of normal human organs and of organs exhibiting cloudy swelling. The tissues were fixed in Altmann's fluid.

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* From the Laboratory of Patholo[illegible] versity of Minnesota, College of Me[illegible]

[1] Virchow, R.: Ueber [illegible] chows arch. f. path. Anat., 1852, iv [illegible], 1858, xiv.

[2] Von Recklinghausen: Handbuch der allgemeinen Pathologie des Kreislaufs und der Ernährung, 1883, Stuttgart, p. 238.

[3] Klebs, E.: Die allgemeine Pathologie, Jena, 1889, p. 100.

[4] Cohnheim: Vorlesungen über allgemeine Pathologie, Berlin, 1882.

[5] Rindfleisch: Die Elemente der Pathologie, Leipsic, 1896, ed. 3, p. 28.

[6] Benario, J.: Die Lehre von der trüben Schwellung, Würzburg, 1891.

[7] Thoma, R.: Text-Book of General Pathology, translated by Bruce, 1896, i, 409

[8] Ziegler, E.: General Pathology, English transl. of 8th revised German edition, 1897, p. 166.

[9] Birch-Hirschfeld: Lehrbuch der pathologischen Anatomie, 1896-1897, i, 64.

[10] Ribbert, H. Lehrbuch der allgemeinen Pathologie und pathologischen Anatomie, 1911, ed. 4, p. 111.

[11] Adami, J G.: Principles of Pathology, 1908, i, 814.

[12] Von Gierke, E.: Aschoff's Pathologische Anatomie, 1911, i, 362.

[13] Landsteiner, K.: Ueber trübe Schwellung, Beitr. z. path. Anat, u. z. allg. Path. (Ziegler's), 1903, xxxiii.

corrosive sublimate, van Gehuchten's fluid, and Müller-formalin. Paraffin sections were stained with iron-hematoxylin, Altmann's stain, etc. He found that an irregular arrangement of the granules is the only characteristic change in cloudy swelling. Inasmuch as the cytoplasmic granulations, demonstrable by this technic, are, for the greater part at least, not identical with those seen in the fresh tissue, Landsteiner's results are not at all contradictory to those of other investigators. Landsteiner does not regard fat as a prominent feature in the cloudy-swollen cell, but he used only osmic acid to demonstrate its presence.

Other investigators have studied cloudy swelling experimentally produced in animals. Favre[14] in 1892 ligatured the left renal vein in rabbits. In animals that died (about one week after operation) cloudy swelling of the right kidney was noted. In animals that were killed after from twelve to eighteen days the right kidney showed little or no cloudy swelling. After ligature of one ureter he found traces of cloudy swelling in both kidneys in animals killed about two weeks after the operation. The condition was pronounced in one rabbit that died after six days.

Schilling[15] in 1894 ligatured one renal vein in the rabbit. After forty-eight hours he obtained pronounced cloudy swelling in the opposite kidney. In teased preparations the tubules are completely opaque, and the cells are enlarged and filled with an enormous number of fine granules which almost completely conceal the nuclei. The Altmann granules are not identical with the granules of cloudy swelling, but the former disappear as the latter develop.

Favre was the first to show that increased work causes a moderate cloudy swelling in the kidney, but his results are not so conclusive as those of Schilling since his animals died from complications.

Schilling showed also that the cloudy swelling is transitory and that it is best developed forty-eight hours after the operation.

Albrecht[16] in 1900 seems to have been the first to describe the coarse granules in the renal epithelium of animals. In teased preparations of fresh renal tissue, examined under an oil-immersion lens, he found inside the rodded zone a number of refractive granules varying with the species and the individual. He does not state whether or not these granules are present in the human kidney. The granules seem to have very delicate walls. He could find no mention of these granules in the literature. He supposed them to have some important physiologic function. On the addition of water or physiologic salt solution a large number of fine droplets appear in the central part of the cell, which appearance Albrecht regarded as an emulsion. In this and later papers this author lays considerable emphasis on the point that certain forms of cloudy swelling may represent an emulsion (*tropfige Entmischung*) of the cytoplasm.

Albrecht[17] in 1902 obtained cloudy swelling in the kidney of the rabbit by the following procedure: The renal artery is ligatured for two hours. The ligature is then released for two or three hours, after which it is again ligatured for twenty-four hours. A less marked cloudy swelling is obtained if the artery is ligatured for one hour and the kidney examined eighteen hours after the restoration of the circulation.

Albrecht[18] in 1903 confirmed Schilling's results in obtaining cloudy swelling in the opposite kidney after ligature of the renal vein. He obtained the same change in the opposite kidney after ligature of the ureter. He therefore interprets this type of cloudy swelling in the compensatorily working kidney as due to increased activity of the epithelium.

Wieszeniewski[19] in 1912 produced cloudy swelling in the kidney by clamping the renal artery two hours and then restoring the circulation for twenty-four hours. The tissues were stained *intra vitam* with toluidin blue. He found that the normal granules (that is, those demonstrable by *intra-vitam* staining) are somewhat decreased in number, but that some of the cells contain a number of large and small blue-stained droplets.

If only the gross features of cloudy swelling are considered there is usually no great difficulty in deciding on the presence or absence of this condition when it is well marked. It is very probable that in routine pathologic work only the gross features are usually considered. The pathologist seldom checks his gross observations on this point by microscopic examination. It was in attempting to do this that I was led into this investigation.

One of the first questions which arose was, If an organ shows the gross features of cloudy swelling, must the microscopic picture agree before this diagnosis is recorded? In the case of a young man who died of acute cerebrospinal meningitis after an illness of less than forty-eight hours, accompanied by very high fever, the necropsy, which was made within two hours after death, revealed a cloudy, somewhat yellowish liver, apparently swollen. Pieces of tissue crushed under the cover-glass, without the addition of any fluid, showed the cells much more opaque than normal in transmitted light, but the cytoplasm was crowded with a large number of small fat droplets. Only a few small albuminous granules were to be seen. The protoplasm became clearer on the addition of potassium hydroxid, but the protoplasm of normal cells will also clear markedly in this solution. The fat droplets were identified as such by their insolubility in potassium hydroxid and their staining with sudan III. The appearances presented by this organ corresponded very well to the classical description of cloudy swelling except that there was no increase of albuminous granules.

I have frequently found livers at necropsy which were similar to the one just described. It is true that they do not have a "cooked" appearance, but they are cloudy and swollen. If we adhere to the customary conception of cloudy swelling these must be regarded as examples of fatty metamorphosis associated with edema. It is to be remembered that fine fat droplets as well as albuminous granules may cause cells to appear darker in transmitted light. One has only to examine an unstained frozen section of a moderately fatty kidney to become convinced on this point. Again the dark and light fibers of voluntary muscle differ from one another mainly in the presence of a large number of fine fat droplets in the former. The increased opacity of the tissue is therefore not a safe criterion.

Benario expressed the opinion that true cloudy swelling is always associated with the presence of fat droplets

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14. Favre, A.: Die Ursache der Eklampsie, etc, Virchows Arch. f. path. Anat., 1892, cxxvii, 33.

15. Schilling, C.: Das Verhalten der Altmann'schen Granula bei der trüben Schwellung, Virchows Arch. f. path. Anat., 1894, cxxxv.

16. Albrecht, E.: Zur physiologischen und pathologischen Morphologie der Nierenzellen, Verhandl. d. deutsch. path. Gesellschaft, 1900, 2d session, p. 462.

17. Albrecht, E.: Neue Beiträge zur Pathologie der Zelle, Verhandl. d. deutsch. path. Gesellschaft, 1902, 5th session, p. 7.

18. Albrecht, E.: Ueber trübe Schwellung und Fettdegeneration, Verhandl. d. deutsch. path. Gesellschaft, 1903, 6th session.

19. Wieszeniewski, W.: Veränderungen nach temporärer Abklemmung der Nierenarterie: Untersuchungen mit vitaler Färbung, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1912, liii, 129.

in the protoplasm; but he seems to recognize the condition rather by the presence of the albuminous granules. Adami apparently agrees with Benario.

Another example of the uncertainty of the gross diagnosis of cloudy swelling may be seen in experimental hydronephrosis in the rabbit produced by ligature of the ureter. Forty-eight hours after the operation the corresponding kidney is greatly swollen and very cloudy. The cut surface is succulent. Usually nearly every tubule is filled with albuminous granules so that both the gross and the microscopic pictures of cloudy swelling are present; but sometimes, though the gross picture is the same, only a few granules are visible microscopically. These two conditions cannot be distinguished macroscopically. The question that arises is whether or not the second type of kidney, that is, the one with only a few albuminous granules, should be classified as cloudy swelling.

Some may argue that a condition like hydronephrosis, in which edema is so prominent a feature, should not be regarded as true cloudy swelling at all; but if one takes this position, and demands that the cut surface of an organ must be dry, then most of the lesions produced experimentally by Favre, Schilling and Albrecht cannot be classed as cloudy swelling.

It is clear therefore that the gross features of classical cloudy swelling may be present in the absence of the typical microscopic appearances. The converse also is true. The typical microscopic appearances occur when the gross features are absent. The following case will serve as an illustration: A rabbit weighing 1,776 gm. developed a large subcutaneous abscess. In nineteen days its weight fell to 965 gm. The kidneys were not swollen. The cut surface was only slightly clouded, but the microscopic examination showed nearly every cell crowded with albuminous granules. Teased preparations showed the "ground-glass" appearance described by Adami, but the gross appearance of the organ did not at all suggest such extensive changes.

A second question that arises is, Exactly what is meant when it is stated that the cells become more granular in cloudy swelling? None of the observers mentioned above seem to consider fat droplets All speak of albuminous granules. The majority evidently refer to granules visible in the fresh tissue, though this is not always clearly stated. Landsteiner, however, was describing a different order of structures when he stated that the only characteristic change in cloudy swelling is an irregular arrangement of the cytoplasmic granules. These may be called the Altmann granules. A large number of papers have appeared which consider the normal arrangement of these granules and their variations in size, number and distribution under experimental conditions.

The rods of Heidenhain are visible in fresh preparations, but the great majority of the granules shown by Landsteiner's technic and other similar procedures are not identifiable with certainty in the fresh tissue. Surely there is no close correspondence between these granules and those visible in cloudy swelling. Schilling expresses the view that the Altmann granules are not identifiable with those of cloudy swelling.

Again when Wieszeniewski finds a reduction of the normal cytoplasmic granules in cloudy swelling, he is describing structures demonstrable by *intra-vitam* staining. Whether or not these represent actual preexistent granules is a matter of debate. They are too few in number to correspond to the albuminous granules seen in unstained tissues.

Investigators who have dealt with human tissues are nearly all agreed that the granules are very small. In the publications accompanied by illustrations the granules are shown as very small.

The granules found in experimentally produced cloudy swelling. however (at least by the procedure employed by me) in the kidneys of the rabbit and the guinea-pig are much larger than those described in man. In the animals mentioned the granules are readily visible with the high-power dry lens. while the oil-immersion is required to see those in human tissues distinctly. If one begins his study on the experimentally produced lesion, he may have difficulty in recognizing the condition in human tissues, so great is the difference in the appearance of the granules. The coarse granulation was noted by me in every instance of cloudy swelling produced in the kidneys of the rabbit and the guinea-pig. The procedure employed was ligature of either the renal vein or the ureter for forty-eight hours. In a few cases of severe infection a similar coarse granulation was observed. It cannot of course be inferred from these results that a finely granular cloudy swelling never occurs in these animals.

As to the number of granules present there is some diversity of opinion. Cohnheim recognized this as a difficulty in that he stated that the condition is more readily recognized grossly than microscopically in tissues that are normally granular. Virchow stated that there is an increase of the cytoplasmic granules. Some observers say nothing as to the number of granules, apparently ignoring the fact that normal cytoplasm may appear finely granular. Thoma states that the granules are so numerous that they obscure or nearly obscure the nuclei. Adami describes the nuclei as similarly obscure by granules in advanced cases.

Several observers (Thoma, Adami) have described the appearances of cloudy swelling as visible after fixation of the tissue. Adami believes that the essential microscopic features may be seen after treatment of the tissues with the ordinary fixing reagents. While one cannot deny the truth of this for special cases, it certainly may be denied general application. In the experimentally produced cloudy swelling in rabbits I have not been able to find any fixative that will preserve the granules. They remain visible for some time in normal salt solution; but frozen sections immediately lose all the characteristic features even when examined in this medium.

The nature and source of the granules are variously given. Some have regarded them as precipitated cell proteins; others believe them to be of the same order as ordinary cytoplasmic granules. In the kidney of an apparently normal rabbit, in teased preparations, examined under low magnification without the addition of any fluid, one may see an occasional dark tubule—the great majority being relatively transparent. A stronger lens shows that all the tubules contain coarse granules; but that, while the light tubules contain only a few, the dark tubules are so closely packed with granules that their nuclei are barely visible. All of these coarse granules, perhaps better regarded as droplets, readily burst and disappear if potassium hydroxid be drawn under the cover-glass.

In cloudy swelling, produced in the rabbit by ligature of the opposite renal vein or ureter for forty-eight hours, which, judged by its gross appearance, is of moderate degree only, the number of dark tubules is greatly increased—about one tubule in every three or four is dark. The light tubules are usually unchanged. No fat is present.

Often an advanced degree of cloudy swelling may be produced in the rabbit in the corresponding kidney by ligature of the ureter for forty-eight hours. Often nearly all the tubules are dark, being filled with albuminous granules. Some fat is always present in these kidneys. Microscopically, therefore, cloudy swelling in the kidney of the rabbit is characterized by a great increase in the number of dark tubules. The dark tubules are not different in appearance from those found in the apparently normal organ. The experimentally produced lesion in rabbits differs so much from the lesion described in human tissues that one may be inclined to doubt that the two conditions are really closely related.

From a consideration of the foregoing observations it becomes apparent that cloudy swelling is by no means a definite pathologic entity. Since we have no exact means of identifying the lesion, experienced observers may disagree even as to its presence in an organ. The gross features may be present in the absence of the classical microscopic picture; and conversely the typical microscopic picture may be present in the absence of the gross features. If we demand that both the classical gross and microscopic characteristics be present before the lesion is classified as cloudy swelling, then we are soon led to make arbitrary and unreasonable distinctions.

There is no agreement at all among the various investigators as to the ultimate nature of cloudy swelling. It is evident that several pathologic processes are represented. In one type, as the compensatorily working kidney, there is increased activity of the epithelium In another form there is probably coagulation and precipitation of the protoplasm. Albrecht's emulsified condition (*tropfige Entmischung*) may represent a third form. Edema and fatty metamorphosis also play an important rôle.

It is therefore tentatively suggested that the term "cloudy swelling" be retained, as a grossly descriptive term only, to describe a cloudy, turbid, swollen organ. A qualifying phrase may then be added to describe the microscopic picture, as cloudy swelling due to albuminous granules; cloudy swelling due to fatty metamorphosis and edema; cloudy swelling due to swelling and coagulation of cytoplasm, etc. Conditions presenting only microscopic changes should be described according to their character.

SUMMARY

The gross features of cloudy swelling may be present in the absence of the classical microscopic picture and vice versa.

Edema and fatty metamorphosis play an important part in the production of the gross picture.

The microscopic appearances are best judged in fresh unstained preparations not treated with any fluid.

The Altmann granules and granules stained by *intra-vitam* methods are not identical to any considerable extent with those of cloudy swelling.

The albuminous granules seen in experimentally produced cloudy swelling in the kidney of the rabbit are much larger than those commonly described in human tissues. As the lesion in this instance becomes more advanced the number of dark tubules increases—some always remaining clear. The characteristic microscopic appearances are not seen in frozen sections or fixed material.

Cloudy swelling is not a definite pathologic condition. It is suggested that the term be employed only in gross description and that a qualifying phrase be added to indicate the associated microscopic changes.

ABSTRACT OF DISCUSSION

Dr. H. Gideon Wells, Chicago: The text-book material that we have to furnish students is largely traditional as regards the retrogressive processes and contains innumerable errors, as little has been done in the field of the retrogressive processes in many years. How would Dr. Bell interpret his results in connection with the ideas of Martin Fischer in regard to cloudy swelling as the result of the action of intracellular acids on the cell? Of course cloudy swelling is nothing more or less than intracellular edema.

Dr. E. T. Bell, Minneapolis: I have not repeated Martin Fischer's work, but it seems to me that acidity might produce granules in the cytoplasm.

EXPERIMENTAL CIRRHOSIS OF THE LIVER*

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Ever since Laennec[1] first described cirrhosis of the liver, there has been an immense amount of experimental work done as to the etiology and histology of this disease. Joannovics[2] in 1904 gave a summary of the work that had been done up to that time together with a summary of the methods used. Briefly these methods as given by him can be summarized as follows: He divides all previous research into two main classes; one in which the formation and increase of interlobular connective tissue takes place with cirrhosis of the liver, and the other in which degeneration of the liver-cells takes place. He says that all operative interferences whether working on the common bile-duct, the portal vein or the hepatic artery belong to the first class, together with the injection of irritating substances into the common bile-duct or into the parenchyma of the liver itself, and also the methods that mechanically irritate the surface of the liver. In the second class he puts poisons which bring about a degeneration of the liver cells, whether given by mouth, subcutaneously, intravenously or by inhalation.

In this study of experimental cirrhosis of the liver, I have adopted Mallory's[3] classification of the five types, namely, toxic, infectious, pigmentary, syphilitic and alcoholic cirrhosis, as it seems to me that the point of view of etiology is best expressed in this manner.

For obvious reasons no experimental work has been done on the syphilitic type. The infectious type has been thoroughly worked out by Weaver,[4] Hektoen,[5] Symmers,[6] Gougerot,[7] Opie,[8] Grigorewsky,[9] Krawkow[10] and Sciagliosi.[11] Various bacteria were inoculated by these experimenters, and cirrhotic changes were obtained.

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10. Krawkow: De la dégénérescence amyloide et les *altérations* cirrhotiques provoquées expérimentalement chez les animaux, Arch. de méd. expér. et d'anat. *path.*, 1896, viii.

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The greatest amount of work has been done in the toxic type of cirrhosis with various substances which have a selective action on the liver-cells. A brief summary of this work with the method used in experimentally producing cirrhosis of the liver is as follows: Wooldridge,[12] proteins derived from glandular organs; Flexner,[13] dog-serum; Nothnagel,[14] chloroform; Marchwold,[15] antipyrin; Joannovics,[2] ammonium salts; Pearce,[16] immune hemolytic serum; Opie,[8] chloroform; Pilliet,[17] silver nitrate; Josselin de Jong,[18] phenol (carbolic acid); Wegner,[19] phosphorus; Mertens,[20] chloroform; Boix[21] lower fatty acids; Rovighie and Portioli,[22] carbamate of ammonium, and Ehrlich,[23] cocain.

As far as I know no experimental work has been done on the pigmentary form of cirrhosis, but after the work of Welch,[24] who showed that the presence of irritating pigment particles in the lung in brown induration and anthracosis as well as similar conditions in other organs would stimulate connective tissue to proliferation, there seems to be no need of further evidence along this line.

In regard to the alcoholic type of cirrhosis most of the evidence that we have so far has been entirely clinical. Joannovics[2] asserted that he had produced this type of cirrhosis by the inhalation of alcohol; Mertens[20] also succeeded in repeating this experiment. Friedenwald[25] with alcohol obtained cirrhosis in some animals but not in others; Straus and Blocq[26] with alcohol obtained some cirrhotic changes.

An immense amount of experimental work has been done by tying the common bile-duct or one of its branches; nearly all the observers have succeeded with this method in producing the cirrhosis known commonly as the obstructive biliary type. Most observers, however, seem to agree that the changes are due to the toxic action of the bile although they do not all agree as to its method of action; therefore, it would seem as if this all might best be included in the toxic type. Ogata[27] has carried out a long series of experiments along these lines and gives a complete review of the literature of this experimental method.

As a result of all this experimental work, one fact stands out prominently from everything else: in the toxic and infectious types the proliferation of the connective tissue which gives us finally cirrhosis of the liver is excited primarily by a repeated injury to the liver-cells. In syphilitic, pigmentary and the tuberculous form of infections there is of course direct injury to the connective tissue itself as the exciting cause. The alcohol type yet remains to be proved.

In starting the present investigation we had two things in mind: (1) to confirm if possible previous work on the toxic and infectious types of cirrhosis, and (2) to obtain some method by which the rôle played by alcohol in the causation of liver cirrhosis could be shown.

The principal experiments are as follows:

EXPERIMENT 1.—Rabbit inoculated in posterior ear vein with *Staphylococcus pyogenes aureus;* as nothing resulted, this was repeated fifteen days later. By the end of another week animal was emaciated and weak, had severe dyspnea and stiff joints, so was killed.

Necropsy showed a generalized pyemia and joint infection due to bacteria inoculated.

Sections of the liver showed considerable interlobular fibroblastic proliferation coming from both blood-vessel and bile-duct walls. The liver-cells showed albuminoid degeneration and some areas of necrosis. The intralobular blood-capillaries are dilated and filled with blood. This seems to be a good example of beginning toxic cirrhosis. No signs of infection were present although we expected to find this as a type of the infectious cirrhosis.

EXPERIMENT 2.—Three animals were anesthetized on three successive days for forty minutes. The first was killed in forty-eight hours, and showed only extensive focal necrosis throughout the parenchyma.

The second was allowed to live for twenty-eight days and then killed. Histologically there is considerable interlobular and also intralobular connective-tissue proliferation. This connective tissue in the portal spaces seems to be coming equally from the blood-vessel and bile-duct and some of it has attained adult form. There is a just beginning budding of bile-ducts.

The third animal was inoculated with 0.5 c.c. of a bouillon culture of *Bacillus coli* in the ear-vein at the time of the last anesthesia. The animal was killed after a three weeks' interval in the usual manner. Grossly the liver markings were quite prominent and the liver-pulp seemed moister than normal. The surface has a slightly roughened or irregular contour, slightly hobnailed. Histologically one finds a marked connective-tissue proliferation in the portal spaces which is beginning to infiltrate the periphery of the lobule. This proliferation seems to be coming much more rapidly from the sheaths of the portal vein branches than from the connective tissue around the bile-ducts although it is coming to some extent from this location also. Some of the portal spaces show a condition comparable to scar tissue as the connective tissue has developed to an adult type—so much so that the intercellular fibers are firm and contracted down so that the nuclei are thin and elongated. In these particular areas there seems to be equal involvement about both veins and ducts. Here also the ducts show numerous bends and some tortuosity, but the connective tissue has closed in so firmly about them that no headway is being made. In a few cases we find this cirrhotic change apparently involving only the portal veins, and in such areas the bile-ducts appear like objects that had been caught in the process and squeezed up. One would expect from this evidence of bile stasis, but none is present nor did the animal have any jaundice. In still other areas the reverse is true that the ducts seem to be mostly involved and the vessels engulfed. Throughout the whole parenchyma the supporting connective tissue is rapidly proliferating. In both the interlobular and intralobular regions there is also more or less endothelial proliferation. The liver-cells themselves appear quite granular and appear to be undergoing an albuminoid degeneration. The cells are vacuolated and have the lattice-work arrangement of the protoplasm mentioned before. The nuclei mostly take the stain very nicely, but once in a great while evidence of karyorrhexis is seen. What evidence of necrosis is present seems to be more marked about the periphery. All the blood-vessels are dilated, as are the capillaries lying between the cells. The latter are very evident, but in no place was there any evidence of rupture or hemorrhage.

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[12] Wooldridge: Tr. Path. Soc London, 1888, xxxix, 44.

[13] Flexner: Med. News, 1894, lxv, 116.

[14] Nothnagel: Die fettige Degeneration der Organe bei Aether- und Chloroformsergiftung, Berl. klin. Wchnschr., 1866.

[15] Marchwold: München. med. Wchnschr., March 26, 1901.

[16] Pearce: Experimenal Cirrhosis of the Liver, Jour. Exper. Med. 1906, viii, 64.

[17] Pilliet: Semaine méd., 1893.

[18] Josselin de Jong: De la cirrhose du foie, 1895.

[19] Wegner: Der Einfluss des Phosphors auf den Organismus, Virchows Arch. f. path. Anat., 1872, lv.

[20] Mertens: Lésions anatomiques du foie du lapin au cours de l'intoxication chronique par le chloroforme et par l'alcohol, Arch. de Pharmakodyn., 1895.

[21] Boix: Le foie des dyspeptiques, Thèse de Paris, 1895.

[22] Rovighie and Portioli: L'azione dell'acido carbamico sull' organismo, Il Morgagni, 1899.

[23] Ehrlich: Deutsch. med. Wchnschr., 1890.

[24] Welch: Cirrhosis Hepatica Anthracotica, Bull. Johns Hopkins Hosp., 1891, ii, 32.

[25] Friedenwald, Julius: The Pathologic Effects of Alcohol on Rabbits, THE JOURNAL A. M. A., Sept. 9, 1905, p. 780.

[26] Straus and Blocq: Arch. de physiol. norm. et path., 1887, Series 3, x, 409.

[27] Ogata: Beitrage zur experimentell erzeugten Lebercirrhose und zur Pathogenese des Ikterus mit spezieller Berücksichtigung der Gallenkapillaren bei der Unterbindung des Ductus choledochus und der Ikterogenvergiftung, Beitr. z. path. Anat. u. z. allg. Path., 1913, xi.

This experiment seems to show that repeated injury to the liver-cells when there is infection or subinfection added will produce very quickly the conditions favorable for the development of cirrhosis. I say subinfection as the colon culture used was one long cultivated in stock and was very attenuated. The findings from this experiment agree fully with Opie's conclusions, namely, that subinfection with colon bacilli will bring about cirrhotic changes in the liver much more quickly than will injury of the same nature without the secondary infection.

Experiment 3.—A cat was operated on under aseptic conditions and the common bile-duct ligated with a silk thread. Unfortunately the bandage that was placed around the cat's abdomen became caught on a wire on the side of the cage and wounded the cat's side so that infection was set up in the thigh. This reached such an extent that the hip-joint was apparently involved and the animal got so weak and emaciated that it had to be killed at the end of four weeks so that the desired experimental period could not be obtained. At necropsy it was found that the infection was one with *Staphylococcus pyogenes aureus*, and involved the hip-joint and had extended up into the pelvis, giving an abscess between the musculature and the peritoneum—one that extended pretty well up over the brim of the pelvis.

The gall-bladder was found enormously dilated and full of bile, and the liver very much bile-stained both on the surface and on section. The cut surface was greenish and firmer than normal and the markings very distinct. Histologically the portal spaces are enormously enlarged from the extreme dilatation of the bile-ducts, which are very tortuous. The blood-vessels of the portal spaces, the central veins and the intralobular capillaries are also dilated and filled with blood. There is quite an extensive interlobular proliferation of connective tissue about the bile-ducts. The tortuosity of the bile-ducts prohibits the observation as to their proliferation. The epithelium of the ducts and the bile capillaries is much more columnar than normal and can easily be observed even in the intralobular tissue in places. There is some proliferation of endothelium but not at all marked. The whole of the parenchyma shows albuminoid degeneration and an occasional area of necrosis. These areas are round, and seem to be mostly central. There are no signs of infection in any part of the liver.

This liver seems to show the customary reaction to biliary obstruction, and I fail to see any evidence that the infection of the animal had any effect unless that manifested in the albuminous degeneration. The results otherwise agree with those obtained by Ogata and others with the same technic. It seems as if this experiment confirmed the results of those who assert that biliary cirrhosis can follow bile stasis without infection entering into the question. In this particular case had the infection any marked bearing we would certainly expect to find the connective-tissue reaction much more active in the vicinity of the blood-vessels and an infiltration with leukocytes or lymphocytes. If the toxins were to be considered we would expect more evidence of necrosis.

Experiment 4.—A rabbit was given by mouth daily except Sunday, before feeding-time in the morning, 15 c.c. of 34 per cent. alcohol. This was given with a medicine-dropper, and after a few administrations no difficulty was found in the rabbits swallowing it. By this method I endeavored to reproduce as closely as possible the conditions in the steady drinker that are supposed to predispose to cirrhosis of the liver, namely, a repeated ingestion of alcohol in the "whisky proportion" on an empty stomach. This experiment was started Nov. 4, 1912, and the animal killed April 9, 1913, covering a period of slightly over five months. Necropsy showed a liver small for an animal as large as this one (which at the beginning was a full-sized rabbit and which grew fatter and larger in the meantime, never showing any signs of being sick). The liver markings were extremely prominent and the organ was lighter in color and firmer; there was some slight roughening of the surface. The heart showed the muscle walls lighter in color than normal as was the endocardium and a sort of gluing together of the flaps of the aortic valve. Evidently there were some aortic stenosis and insufficiency. Histologically sections showed quite a large increase in the interlobular connective tissue in which there were many proliferating bile-ducts, the buds and new branches of which stood out very distinctly. In several places it was evident that these were trying to penetrate the periphery of the lobules. The blood-vessels were not particularly noticeable. The connective tissue seemed to be proliferating from the preexisting connective tissue in these portal and interlobular spaces. Some ingrowth into the lobule had taken place but was not particularly far advanced. More or less increase of the intralobular connective tissue was also observed. The cells of the liver parenchyma showed pretty much throughout a moderate degree of albuminoid degeneration. Occasionally the central part of a lobule and in one place a whole lobule had undergone a more severe change, but not far enough to be called true necrosis. With the higher power of the microscope the protoplasm of the cells has the lattice-work arrangement of threads as described previously. These threads where they crossed one another seemed to be sort of bunched up in a way similar to the nodal points in fibrin fibers. The protoplasm of the cells had a tendency to gather at the periphery of the cell along the cell membrane, and these threads intervened across the more central portion. The nuclei stained rather irregularly, having somewhat of a similar thread-like appearance of its chromatin. Karyokinetic figures were rarely observed, but a good many cells were seen with double nuclei. In some cells the nucleus was apparently lost, yet the protoplasm had the characteristic appearance already noted. An occasional cell was vacuolated, but nothing could be determined as to the contents of the same. Once in a while a cell or a group of cells would stain more brightly than the others. As some of these had double nuclei I took them to be regenerated or regenerating cells. Very rarely in the protoplasm of a cell could be made out a portion, really one of these nodal masses mentioned before, that took a brighter stain with eosin than the others. It seemed to me that this might possibly be a beginning of that hyaline skein-like degeneration that Mallory believes to be pathognomonic of alcoholic cirrhosis.

The intralobular blood-capillaries were dilated and their walls could be fairly well made out. The endothelium of these as well as that of the lymph-spaces in the portal regions is actively proliferating.

It seems as if this experiment gives at least suggestive evidence that alcohol, *per se*, has a deleterious effect on the liver and that as a result of this effect cirrhotic changes occur. It is true that no others have been able to obtain just this result, but I believe that with the same technic others will get the same results. A long series of experiments is necessary before absolute conclusions can be drawn, and such experimentation is to be undertaken. Hence the question is still open until the results of further research can be announced.

Experiment 5.—Another animal was treated in the same way for four months, but at the end of the third month was inoculated with 0.5 c.c. of a bouillon culture of *B. coli* in the ear-vein. Histologically the liver shows a beginning of cirrhosis but much less than the last. The bile-ducts have not yet undergone any change, thus showing that bile-duct proliferation is a later process than the proliferation of connective tissue. The colon bacilli seemed to have no influence, thus acting contrary to the results obtained with it in chloroform necrosis.

CONCLUSION

It seems as if our results confirm those of previous investigators as to the toxic type of cirrhosis and as to the infections when combined with the toxic. Our results with the obstructive biliary type we are unable to place in either of these two classes, but in general they are the same as obtained by other observers.

It seems as if we had demonstrated a method by which the alcoholic type can be produced. Our series of experiments as to this is so short that, of course, no absolute conclusion can be reached. Therefore we desire merely to give this as a preliminary report of progress in an investigation undertaken and which is to be continued for a long time.

SUMMARY

I have given a brief review of some former experimental work on cirrhosis of the liver and have noted that in accordance with Mallory's classification of the disease the pigmentary and the syphilitic, the toxic and the infectious types had been fairly well worked out from an etiologic point of view.

This investigation of ours has in its limited way confirmed the results as to the toxic, particularly as to the infectious and to the so-called obstructive biliary types of the disease.

I furthermore believe that we have obtained a method by which the alcoholic types may be reproduced experimentally and have given this method and its results entirely as a preliminary report.

ABSTRACT OF DISCUSSION

Dr. Henry Albert, Iowa City, Iowa: Thus far, a typical cirrhosis of the liver by the use of alcohol has not yet been produced experimentally. The work of Opie in the production of cirrhosis is exceedingly suggestive and it was largely with the idea of using alcohol instead of chloroform as the initial agent that Dr. Grover started his work. I think that Dr. Grover has succeeded in obtaining a better example of a purely alcoholic cirrhosis—in which nothing but alcohol was used—than has previously been obtained, and we shall all be interested in the experiments which he is now continuing.

Dr. H. E. Robertson, Minneapolis: Some time ago we started out in this laboratory doing experiments on alcoholic cirrhosis, and we were compelled at that time to discard the rabbit for use in these experiments because of the numerous sclerotic conditions which occurred in this animal, not only in the vessels but in the kidneys, liver and heart; we found that the rabbit was a very uncertain animal for use in investigations of this kind. I do not question at all that the chances are this present experiment may be the result of the use of alcohol, but I suggest that these results be carefully controlled by various other animals at various ages before definite conclusions are drawn. We turned our attention to dogs as having livers of more normal content and used young dogs in order to be certain of that point. We carried on experiments lasting over a year in a number of dogs, feeding them alcohol each day and at the end of the week giving them a larger dose, so that the dogs were not only chronic drinkers, but they went on a spree at the end of every week. At the end of these periods we found apparently no change in the liver. There was not the slightest possibility of inference that there was any production of fatty tissue.

Dr. A. L. Grover, Iowa City, Iowa: I have found two references in the literature in regard to rabbits sometimes showing sclerotic changes that cannot be accounted for, one by Joannovics and another by Christian. In necropsies on about forty rabbits last year, we found two rabbits that showed sclerotic changes in the liver and in both those cases we could account for it by the fact that there was enough else the matter with the rabbits. One died under anesthesia and the other died from infection. The one that died under anesthesia had a condition of the kidney which showed that the rabbit had some toxic infection, while the second had more or less of a pyemia. Those are the only rabbits that we have been able to find showing sclerosis. Our rabbits come from a good many litters and there is no reason why they should not represent pretty much all the conditions.

ATTEMPTS TO TRANSMIT POLIOMYELITIS BY MEANS OF THE STABLE-FLY (STOMOXYS CALCITRANS)*

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In a discussion before the Fifteenth International Congress on Hygiene and Demography, Sept. 26, 1912, Rosenau[1] reported that he had been able to transmit a disease in all essential respects like poliomyelitis, through the agency of the biting stable-fly, from monkeys purposely infected with poliomyelitis to six out of twelve well monkeys used in his experiment. At the time of this announcement parts of California were passing through a severe epidemic of poliomyelitis,[2] and the problem of preventing the spread of the disease was of especial concern to the State Board of Health. If the stable-fly was the chief disseminator of poliomyelitis, very important steps were not being taken, while unnecessary preventive measures, some of them very burdensome, were being enforced. The State Board of Health at once laid plans for an investigation to determine the extent to which it should consider the stable-fly in measures for preventing poliomyelitis, and suggested to Thomas Forsyth Hunt, dean of the College of Agriculture and director of the Agricultural Experiment Station of the University of California, that a joint investigation be carried on by the State Board of Health and the experiment station. This was agreed on, and it was decided to begin at once, as it was considered important that evidence should be available for practical application before another summer could bring a fresh outbreak. The cold winter of the Eastern states was apt to interfere seriously with the experiments which were being carried on there, while the milder climate of California would permit the securing of abundant fly-breeding material during most of the year. These facts were additional reasons for taking up the work here.

Before the experiments could be started Anderson and Frost[3] reported the confirmation of Rosenau's demonstration that poliomyelitis may be transmitted from sick to well monkeys through the agency of the biting stable-fly. In their experiments, three healthy monkeys were bitten by stable-flies which had been allowed to bite two other monkeys sick with poliomyelitis after intracerebral inoculation. All three of the healthy monkeys developed poliomyelitis nine or ten days after the inoculation of the first of the two which were experimentally infected. In Rosenau's announcement he stated that the monkeys showed symptoms of poliomyelitis several weeks after the flies, which were biting them frequently, had had their first opportunity to receive infection from sick monkeys. This would allow abundant time for a definite biologic change in the virus, preparing it, during the incubation in the fly as intermediate host, for successful inoculation into the warm-blooded monkey.

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[1] Rosenau, M. J.: Transmission of Poliomyelitis, abstr., The Journal A. M. A., Oct. 5, 1912, p. 1314.

[2] Gundrum, F. F.: Acute Poliomyelitis in California, California State Jour. Med., May, 1913, xi, 193.

[3] Anderson, J. F., and Frost, W. H.: Transmission of Poliomyelitis by Means of the Stable-Fly (Stomoxys calcitrans), Pub. Health Rep., Washington, Oct. 25, 1912, xxvii, 1733.

Such a process seemed not an improbable explanation of the results when we considered that Rosenau was dealing with a blood-sucking insect and a disease in which the blood had been shown to have very low infectivity on direct inoculation. The symptoms of poliomyelitis in the experiments of Anderson and Frost appeared so soon after the first possible transference of infectious material that in all probability the process consisted of a mechanical transference of blood or other infectious material taken up by the flies while repeatedly piercing the skin. The extreme shortness of time available, in their experiments, for incubation of the virus in the fly is apparent when we consider that, in the interval of nine or ten days, we must allow also for the development of the virus in the original, inoculated monkeys and for the incubation period in the monkeys infected by the flies. Our experiments were undertaken to determine the conditions under which the stable-fly could transmit poliomyelitis and to learn whether the process was a more or less accidental mechanical transference, or one which involved a specific biologic change of the virus in the fly.

GENERAL TECHNIC

The monkeys used in our experiments were kept separate in roomy fly-tight cages with inner walls of coarse wire netting and outer walls of fly screening. When a consignment of monkeys was first received they were given an insecticide bath in a dilute cresol preparation and then placed in cleaned and disinfected cages. With a few exceptions they were kept under observation for from one to four weeks before being put under experiment, and this precaution was justified by the development of various fatal diseases in four of the animals during the preliminary observation. Every day each monkey under observation or experimentation had its temperature taken and was weighed in a bag which had been sterilized in the autoclave since its previous use. When the monkeys were placed on the animal board for fly-feedings or for ether anesthesia preparatory to inoculation, the board was first protected with a sterilized sheet perforated with holes through which the disinfected neck-holder could project. The arms and legs of the monkey, while it was on the board, were held by attendants, one wearing a pair of leather gloves, used only in handling that individual monkey, and the other using rubber gloves which had been boiled. Jars containing the flies were applied to the abdomen and chest, which were washed (whenever indicated by the plan of the experiment) to prevent the transference, on the jars, of saliva or other possibly infectious material from the surface of one monkey to that of another. The rooms in which the monkeys and rabbits were kept were specially screened at the windows against flies and were provided with screened vestibules at the doors.

No flies caught in the open were used in the feeding experiments. The importance of this was shown by some preliminary observations for which stable-flies were caught around barns in Berkeley. These flies were fed on a normal rabbit from Oct. 18 to 27, 1912, when the last of them died. The next day it was noticed that the rabbit had lost weight, and on October 30 it died. The ears showed scaling lesions near their bases, where the flies had bitten, a condition not noticed in any of the rabbits used for feeding larger numbers of flies bred in the laboratory. There were no other definite lesions discoverable at necropsy, and cultures from the heart's blood on nutrient broth and agar remained sterile.

A second rabbit was used for continuing the feedings of some laboratory-bred flies which had fed previously on the rabbit which died. This rabbit showed symptoms of weakness and scaling lesions similar to those of the first rabbit between November 4 and 7, after which date it seemed to improve. On November 14 weakness returned and it died November 16. At necropsy a large abscess was found, extending externally to the thoracic wall on the right side from the median line in front almost to the backbone. The abscess extended under the scapula. A small bacillus was found in large numbers in the pus.

Flies which had fed on the second rabbit were fed up to December 16 on a third rabbit. On January 7 this rabbit was examined and was found to have a large abscess similar in extent to that of the second rabbit. This abscess finally discharged spontaneously and the rabbit recovered. Mr. Harold F. Gray, to whom we are indebted for many of the observations just cited and for other assistance during our experiments, attempted to transfer the infection still further to other rabbits through the medium of the fly, but the animals remained well. He showed the identity of a bacillus abundant in the pus of the second and third rabbits. The organism was a Gram-negative, polar staining, non-motile, hemophilic bacillus. Although it did not belong to the influenza group, it possessed many of the characteristics of the members of that group.

This experience is given as an instance in which stable-flies very probably transmitted to a rabbit a pathogenic organism which they had previously acquired while free in nature. It strengthened our determination to exclude flies caught in the open from our experiments and so to avoid this additional risk of complicating them, although the previous experimenters along the same line had used both caught and laboratory-bred flies without apparent introduction of extraneous infections.

The flies used were hatched in jars from larvae and, to a less extent, from pupae found in decaying hay and other vegetable matter around dairies and stock-yards. The breeding material was kept at from 23 to 26 C. (from 73.4 to 78.8 F.) in an insectary specially devised for this work. As the flies hatched they were transferred in lots of fifty to wide-mouthed quart fruit jars. The jars were then permanently sealed with a piece of bobbinet, the edges of which were drawn down over the sides of the jar and firmly held by an encircling band of adhesive plaster. The flies were fed by inverting the jars and holding them until the flies were satisfied (usually from twelve to thirty minutes) against the abdomen and chest of a monkey or rabbit which had been placed on an animal board. The flies usually were eager to reach their proboscides through the bobbinet and to suck the blood until their bodies were distended, and we experienced no difficulty in keeping most of them alive in the jars for a reasonable length of time.

Experiment 1.—The first experiment was undertaken to confirm Rosenau's observation of the transmissibility of poliomyelitis through the agency of the stable-fly, and more especially to throw light on the question whether we are dealing with a specific process of development of the virus in the fly, or a more immediate mechanical transference, or both. The first step was an attempt to find out the exact length of time that the virus must be in the fly before its bite can produce a successful inoculation, and also the limits of the period or periods during which the fly is infectious.

Monkey 2 was inoculated intracerebrally on Dec. 16, 1912, with poliomyelitic virus M A. for which we are indebted to Dr. Flexner and Dr. Clark of the Rockefeller Institute. On the following day, and every day thereafter until the death of Monkey 2 from poliomyelitis on December 21, five new jars of flies were fed on his abdomen and chest. On the day he died flies in three such sets of five jars each were fed, at intervals of several hours. After the feeding of the flies in each set of five jars, the flies in one jar were fed at once on normal Monkey 3. Another jar was kept twenty-four hours and the flies then fed on Monkey 4. The third was kept for two days and the flies then fed on Monkey 5. The fourth was kept four days and the flies then fed on Monkey 6. The fifth was kept eight days and the flies then fed on Monkey 7. After the flies in the first jar had fed on Monkey 3, it was set aside and, sixteen days after the original feeding on Monkey 2, the flies were fed on Monkey 8. In all the jars the flies that survived twenty-nine days after their single feeding on Monkey 2 were thereafter fed daily on Monkey 14 until his death from pneumonia on Jan. 20, 1913. On January 23, his place was taken by Monkey 15, on whom the remaining flies fed daily until they died. The last fly died on February 1, forty-five days after its feeding on Monkey 2.

When a set of flies had to be kept for more than forty-eight hours without feeding on a monkey, they were fed on a young rabbit used only on that one day.

If the virus of poliomyelitis was freely circulating in the blood of Monkey 2 at any time during the development or height of the disease, there was a good chance that some of the flies allotted to each of the other monkeys would take up the virus.

In no instance were we able to demonstrate that poliomyelitis had been transferred from Monkey 2 to one of the other monkeys. Monkeys 3, 4, 5, 6, 7 and 8 were kept under observation for 70, 62, 112, 115, 106 and 101 days, respectively, and were then transferred in good condition to other experiments in this series. During the periods of observation these monkeys remained entirely well except Monkey 6, which had a few attacks of diarrhea associated wtih subnormal temperature and, in one instance, with a convulsion. Monkey 14 died from pneumonia and pneumococcus septicemia five days after the first time that flies had fed on him. Monkey 15 died sixty-six days after the first time that flies had fed on him. The cause of death was not poliomyelitis, as was proved by post-mortem examination and by inoculation of some of the cord tissue intracerebrally into another monkey. Later in this report will be found individual records for each of the monkeys.

Seventeen young rabbits, which were used for feeding the flies in this experiment, were under observation for from four to eight weeks, and all remained well except two that died of coccidiosis eighteen and thirty-three days after they had been used.

Having failed in Experiment 1 to transmit poliomyelitis through the agency of the stable-fly, Experiments 2 and 3 were devised to give the flies increased opportunity to transfer the disease.

Experiment 2.—Monkey 9 was inoculated intracerebrally on Jan. 8, 1913, with poliomyelitic virus M A from Monkey 2. On the same day Monkey 9 was immobilized by being wrapped in chicken-fence wire and was laid in a large pan. He was then put through a cloth sleeve into a screen-walled insect cage measuring 45 cm. in height and in width and 71 cm. in length. In this cage 500 recently hatched stable-flies had been released. Monkey 9 was exposed in this way for two hours daily up to January 11, the day of his death from poliomyelitis. Beginning on the day following the inoculation of Monkey 9 another monkey, No. 11, was exposed daily to the same flies in the same way until the last flies died on January 14. The flies in this experiment did not do nearly so well as flies bred at the same time and used in jars in Experiment 3. The flies sat most of the time on the screen walls of the cage and very few were seen to feed. As a consequence they died off very rapidly, most of them within three days, and the last survivors succumbed on January 14, after the exposure of Monkey 11 on that day.

These flies, as well as the flies used in Experiments 3 and 4, were kept in the insectary at from 23 to 26 C. (from 73.4 to 78.8 F.). The high temperature was used because it would probably have favored any development of the virus in the fly. In the other experiments the flies were kept at room temperature, which ranged from 8 to 27 C. (from 46.4 to 80.6 F.), but lay between 12 and 20 C. (53.6 and 68 F.) most of the time.

As the flies in the first experiments ate better and lived longer in the jars than in the cage, the later experiments were carried on with flies in jars only.

Monkey 11 remained well during an observation period of ninety-five days after the last fly-feeding, and he was then used in a later experiment. Poliomyelitis was not transferred by flies in this experiment, which was unsatisfactory owing to the high mortality among the flies.

Experiment 3.—In this experiment Monkey 9, which had been inoculated with poliomyelitic virus M A on January 8, as already described in Experiment 2, and normal Monkey 10 were placed side by side on animal boards. Fifteen jars of flies were fed for three-minute periods alternately on the two monkeys, beginning on No. 9. The flies were fed until satisfied, and this took usually from fifteen to twenty minutes. Some of the flies were allowed to feed on the face of Monkey 10. Face inoculations in rabies, a disease in many respects like poliomyelitis, give an increased chance for infection and a comparatively short incubation period. The feedings began on the day that No. 9 was inoculated, January 8, and continued January 9 and 10. Monkey 9 died early on January 11. Thereafter the flies were fed daily on the abdomen, chest and face of Monkey 10 until the last flies died on January 29. Monkey 10 died forty days after the first fly-feedings. Necropsy and the inoculation of cord tissue into a normal monkey ruled out poliomyelitis as the cause of death.

We had failed to transmit poliomyelitis through the medium of stable-flies even when they were allowed to bite the sick and the well monkeys in rapid alternation, and to bite the face, as well as the chest and abdomen, of the healthy monkey.

Experiment 4.—In this experiment inoculation tests were made to determine the presence of poliomyelitic virus in the stable-fly immediately after feeding on the blood of an infected monkey and several days later. As the blood itself is seldom infectious on inoculation, and then only when used in large quantities, we did not expect to demonstrate the virus in the flies which had just fed, but we wished to determine whether or not a development of the virus in the fly would permit successful inoculation later.

On January 10, eleven jars of freshly hatched flies were allowed to feed on Monkey 9, which was at that time showing severe symptoms from poliomyelitis. Thirty flies visibly distended with blood were selected from these jars. They were immediately chilled, ground up in a mortar with 7 c.c. of physiologic salt solution, and passed through a Berkefeld filter; 5 c.c. of the filtrate was inoculated into both frontal lobes of Monkey 12.

Later a filtrate was similarly made of ninety-eight flies from sets which had fed on Monkey 9 at the height of his disease four days before. Many of the flies had fed on him also one day earlier. The flies had been kept in the warm insectary and had been fed several times during the interval. Four c.c. of this filtrate were injected into both frontal lobes of Monkey 13. He remained well during an observation period of eighty-nine days and was then used in a later experiment.

Monkey 12, four days after he had been inoculated with fly-filtrate, suddenly developed general weakness and twitching of the extremities. He died a few hours later. Post-mortem examination, including microscopic examination of the cord, showed no evidence of poliomyelitis. Some of the cervical cord, after preservation in 50 per cent. glycerol (glycerin) was inoculated into another monkey, which did not develop poliomyelitis.

In this experiment we had failed to produce poliomyelitis in two monkeys inoculated intracerebrally with ground and filtered flies which had fed on the blood of a monkey sick with poliomyelitis. In one instance the flies had just ingested the blood, and in the other they had bitten the infected monkey four and five days before. Unfortunately death from causes other than poliomyelitis did not allow a reasonable observation period for the monkey inoculated with the flies which had fed immediately before.

Experiment 5.—After a delay due to the scarcity of fly-breeding material in the last half of the winter, Experiment 5 was undertaken to test again the ability of the stable-fly to transfer poliomyelitis by sucking blood from the clean skin of an infected monkey and subsequently biting a normal monkey. Monkey 13 was inoculated intracerebrally with poliomyelitic virus M A on April 13. Beginning the following day seven jars of flies (increased to eight the next day) fed for twelve minutes daily, alternating for three-minute periods between the cleaned abdomens or chests of Monkey 13 and normal Monkey 5. This experiment was duplicated by similar feedings on Monkeys 13 and 7. After the death of Monkey 13 from poliomyelitis on April 18, the fly-feedings were continued on the other two monkeys. The death of Monkey 5 on May 19 interrupted the feedings of one set of flies. The cause of death was not poliomyelitis, as was shown by necropsy findings, to be given later, and by inoculation of brain and cord-tissue into a normal monkey with negative results.

The last of the flies which fed on Monkey 7 died on June 13, two months after the first feedings. On June 16, Monkey 7 was used in another experiment, but continued to remain normal.

The flies had failed to transmit poliomyelitis through frequent alternate bitings of sick and well monkeys followed by daily feedings on healthy monkeys.

Experiment 6.—It was thought that possibly the results of the previous investigators had been due to the access of the flies to infectious material on the surfaces of the diseased monkeys and about their body orifices. This was not improbable as nasal washings and feces had frequently been shown by other investigators to contain the virus. Experiment 6 began on April 14 and was exactly parallel to Experiment 5, except that the abdomen and chest of Monkey 13 were painted, before the fly-feedings, with a mixture of his saliva, his feces, and (late in the disease) his nasal washings in physiologic salt solution. After his death from poliomyelitis on April 18, a rabbit was substituted for Monkey 13 and was painted with the same mixture. After April 21, the rabbit was no longer used and the flies fed only on the two normal monkeys, Nos. 8 and 3. Monkey 3 died on May 2 from other causes than poliomyelitis, as was shown by post-mortem examination and inoculation of cord-tissues into a normal monkey. The last of the flies feeding on Monkey 8 died on June 16, over two months after the beginning of this experiment. Monkey 8 was still well and under observation on July 31, 1913, one hundred and eight days after the first fly-feedings.

Poliomyelitis had not been transferred to well monkeys by flies which had bitten in rapid alternation well monkeys and a sick monkey, painted with his own nasal washings, feces and saliva.

Experiment 7.—This experiment had the same purpose as Experiment 6 and was parallel to it except that an emulsion of the highly infectious brain-tissue of Monkey 13, dead of poliomyelitis, was used in place of the mixture of nasal washings, feces and saliva, and a normal monkey was painted instead of one sick with poliomyelitis. An emulsion in physiologic salt solution was made at first with the fresh brain-tissue, later with brain-tissue which had been in 50 per cent. glycerin. Normal Monkey 4 was painted with this suspension, and flies were fed on Monkey 4 and 11 alternately and also similarly on Monkeys 4 and 6. After the daily feedings the virus was carefully washed off. The feedings through virus on Monkey 4 lasted for sixteen days, from April 19 to May 4, and after that the flies fed on the other monkeys only. The last of the flies which fed on Monkey 11 died on June 15 and the last of those feeding on Monkey 6 succumbed two days earlier. Monkey 4 was still well and under observation on July 31, 1913, one hundred and three days after the beginning of the experiment. The other two monkeys were used on June 16, fifty-eight days after the beginning of the experiment in other parts of the investigation. They remained well, as will be seen in their individual records.

Poliomyelitis had not been produced in a well monkey by stable-flies even when they had to drive their proboscides through a layer of highly infectious brain-tissue in order to pierce the skin. The same flies did not transmit the disease on subsequent bitings of two other monkeys.

RECORDS OF THE MONKEYS IN BRIEF

Monkey 2.—*Macacus rhesus*, 3,300 gm., about a year old. Used in Experiment 1. Inoculated intracerebrally with virus M A on Dec. 16, 1912. On December 21, profound weakness, paralysis of left side of face and of extensors of right elbow. Died same day. Cord showed on microscopic examination marked infiltration with lymphocytes and polymorphonuclear leukocytes around the blood-vessels and throughout the gray matter; destruction of many ganglion cells; numerous small hemorrhages in the gray matter. Monkey 2 evidently died of poliomyelitis.

Monkey 3.—*Macacus rhesus*, 2,100 gm., about a year old. Used in Experiments 1, 3 and 6. In Experiment 3 he was inoculated intracerebrally on February 25 with the cord-tissue of Monkey 10 in order to test it for the virus of poliomyelitis. Remained well until May 2. On that date, while being used in Experiment 6, he showed marked weakness and rigidity of the extremities. Died in the afternoon. Necropsy showed enlargement of axillary, inguinal and mesenteric lymph-nodes. Slight cutaneous and subcutaneous hemorrhages where the flies had fed. Old peritoneal adhesions. Microscopic examination of the cord showed no departure from the normal. On June 16, 2 c.c. of a heavy emulsion of his cervical cord was inoculated intracerebrally into Monkey 6, which is still normal forty-five days later, July 31, 1913. The evidence shows that Monkey 3 did not die of poliomyelitis.

Monkey 4.—*Macacus rhesus*, 2,800 gm., about a year old. Used in Experiments 1, 4 and 7. In Experiment 4 he was inoculated intracerebrally on February 22 with cord-tissue of Monkey 12 to test it for the presence of poliomyelitic virus. Two days later he developed pneumonia. In three days he was again well. Still healthy on July 31, 1913.

Monkey 5.—*Macacus rhesus*, 2,700 gm., about a year old. Used in Experiments 1 and 5. Became weak on April 19. Pupils became dilated on April 21 and he seemed to be blind. Improved on May 2. On May 18 the symptoms became aggravated. Died May 19. Necropsy showed general enlargement of lymph-nodes. Old peritoneal adhesions. The brain showed soft tissue bulging in small areas from the left anterior lobe externally and into the median fissure. On section the regions of both lateral ventricles were markedly hemorrhagic. Other areas of the brain were dotted with minute hemorrhages about 0.3 mm. in diameter. On microscopic examination the tissue showed no abnormality except the hemorrhages. Cultures of the brain-tissue remained sterile. The cord was normal on microscopic examination. Two c.c. of a heavy emulsion of tissue from the brain and cervical cord, kept in 50 per cent. glycerol, were inoculated intracerebrally, July 16, 1913, into Monkey 7, which was still normal forty-five days later, July 31. Monkey 5 did not die of poliomyelitis.

Monkey 6.—*Macacus rhesus*, 1,600 gm., aged about 10 months. Used in Experiments 1, 7 and 6. In Experiment 1 he had a subnormal temperature, attacks of diarrhea, and one convulsion between January 1 and 4. In Experiment 6 he was inoculated intracerebrally on June 16 with 2 c.c. of a heavy emulsion of the cervical cord of Monkey 3 to test the tissue for the presence of poliomyelitic virus. Monkey 6 was still healthy and gaining in weight, July 31, 1913.

Monkey 7.—*Macacus rhesus*, 2,600 gm., aged about 12 months. Used in Experiments 1 and 5. On June 16 he was inoculated intracerebrally with 2 c.c. of heavy suspension of brain and cord-tissue from Monkey 5 to test the tissue for the virus of poliomyelitis. Monkey 7 was still in excellent condition on July 31, 1913.

Monkey 8.—*Macacus rhesus*, 2,100 gm., about a year old. Used in Experiments 1 and 6. On January 7. hemorrhagic spots, where flies had bitten him a day or two before. were very marked and appeared in many places as red circles. from 0.5 to 1 cm. in diameter, with centers of normal skin. Still normal on July 31, 1913.

Monkey 9.—*Macacus rhesus*, 2,900 gm., about a year old. Used in Experiments 2, 3 and 4. Inoculated intracerebrally with 2 c.c. of heavy emulsion of virus M A from Monkey 2 on January 8. On January 10, profound general weakness, twitching of extremities, subnormal temperature. Died January 11. Brain and cord normal on inspection. Sections showed little change in the cord except moderate infiltration of the meninges with lymphocytes and polymorphonuclear leukocytes. Monkey 9 died of poliomyelitis after intracerebral inoculation.

Monkey 10.—*Macacus rhesus*. 2,200 gm., about a year old. Used in Experiment 3. On Feb. 14. 1913. he showed marked general weakness. In the examination of his blood 158 normoblasts were counted while a differential count of 200 leukocytes was being made. Hemoglobin. 55 per cent. of normal. Red corpuscles. 3,300,000 per cubic millimeter. Marked poikilocytosis, polychromatophilia and stippling. Died February 17. Necropsy showed old peritoneal adhesions. Cultures from heart's blood remained sterile. The cord on microscopic examination appeared to be normal. Two c.c. of a heavy emulsion of cervical cord was injected. February 25, into the frontal lobes of Monkey 3, which remained normal up to transference to another experiment forty-eight days later. Monkey 10 did not die of poliomyelitis.

Monkey 11.—*Macacus rhesus*, 1,900 gm., about a year old. Used in Experiments 2, 7 and 1. In Experiment 1 he was inoculated intracerebrally on June 16 with 2 c.c. of a heavy emulsion of cervical cord of Monkey 15 to test the tissue for poliomyelitic virus. Monkey 11 was still normal on July 31, 1913.

Monkey 12.—Java, 1,900 gm.. about a year old. Used in Experiment 4, as already described. On January 14 he showed twitching of the extremities and pronounced weakness, and four hours later he died. Necropsy showed slight evidence of laceration and hemorrhage in the frontal lobes where the fly-filtrate had been injected. Sections of cervical, dorsal and lumbar cord showed no lesions on microscopic examination. On February 22, 3 c.c. of a heavy emulsion of the cervical cord (preserved in 50 per cent. glycerol) was inoculated intracerebrally into Monkey 4, which remained well for fifty-seven days up to transfer to another experiment. Monkey 12 did not die of poliomyelitis.

Monkey 13.—*Macacus rhesus*, 4,800 gm., an adult several years old. Used in Experiments 4, 5, 6 and 7. For the last-named three experiments he was inoculated intracerebrally, April 13, with virus M A from Monkey 2. Three days later his right pupil was dilated. The next day his pupils were small. He showed paralysis of the upper part of the left side of his face and was unable to close his left eye. Left leg weaker than right. Died the same day. Necropsy showed ecchymoses where the flies had fed. Mesenteric lymph-nodes enlarged. Blood pale. On section the cord showed visible hemorrhage and swelling in the gray matter. On microscopic examination the cord showed marked infiltration of the gray matter with inflammatory cells, numerous hemorrhages and moderate destruction of ganglion cells. The cause of death was evidently poliomyelitis.

Monkey 14.—Java, 1,700 gm., aged about 10 months. Used in Experiment 1. On January 19 he became quiet and showed twitching of extremities and face. The following day there was profound weakness, subnormal temperature, drowsiness and rapid, labored, grunting respirations. A blood-smear showed many lanceolate diplococci, and a reduction of the polymorphonuclear leukocytes from 61.8 to 8.5 per cent. of the white corpuscles, which were reduced in total number. Died January 20. Necropsy showed enlarged and slightly hemorrhagic lymph-nodes in axillae and groins. Many subperitoneal ecchymoses. Old peritoneal adhesions. Roundworms in the walls and lumen of the large intestine. Spleen enlarged, dark and firm. Lungs only slightly collapsed. Upper lobes firm, dark red, and abnormally moist on section. Lower lobes showing beginning engorgement. Smears from the spleen showed Gram-positive lanceolate diplococci, and similar organisms were found in the lung. The brain and cord appeared normal on inspection. Death was due to pneumonia and pneumococcus septicemia.

Monkey 15.—Java, 1,800 gm., about a year old. Used in Experiment 1. On March 25, 1913, he began to have attacks of syncope and slight convulsions. Marked weakness on March 29. Found dead next morning. Necropsy showed no lesions of special interest. Sections of the cord on microscopic examination seemed normal. On June 16, 2 c.c. of heavy emulsion of the cervical cord were inoculated intracerebrally into Monkey 11, which was still healthy on July 31, 1913. Monkey 15 did not die of poliomyelitis.

NOTES ON THE STABLE-FLY

During the fall and the first half of the winter we found abundant larvae and pupae in moist decaying alfalfa and grain hay in the bottoms of outdoor feeding-troughs for cattle. Larvae and pupae were plentiful also in wet hay siftings under a large dairy-barn and at the bottom of a stack of hay piled in an inadequately drained horse-barn. Larvae were found in wet middlings which had accumulated beside a mixing-trough in a dairy, in a pile of decaying onions, and in a wet mixture of decaying weeds and grass. *Stomoxys* larvae and pupae were rare in manure, a favorite breeding-place for the house-fly. This shows that the measures successful in the control of the house-fly are not adapted to the suppression of the stable-fly, as the two insects differ in their choice of breeding-places.

From the middle of January to the middle of March, breeding material adequate for our experiments could not be found. Prolonged search revealed only occasional pupae and very few larvae. On March 26 we began to find large numbers of young *Stomoxys* larvae in wet decomposing hay in sunny spots on the ground beside feed-troughs, and in a pile of decomposed refuse, chiefly hay and straw, which had been thrown from a dairy barn. After this date we had no trouble in obtaining plenty of fly-breeding material.

With few exceptions, we found on the premises of twelve poliomyelitis patients, whom we were able to visit during the fall and winter, stable-flies varying in number according to the season and the proximity to domesticated animals. It is probable that in California stable-flies can be found wherever there are cattle or other domesticated animals to supply the needed blood. We observed a few of the adult flies in the middle of winter.

In the study of the life history of the stable-fly (*Stomoxys calcitrans*, Linn.), we observed that, in the insectary at from 23 to 26 C. (from 73.4 to 78.8 F.), female flies deposited eggs on the eighteenth day after their emergence from the pupa cases. The number of eggs deposited varied from 25 to 124, but it was most frequently between 30 and 35. Usually the flies died a few days after ovulation. A set of flies which were fed only on sugar-water deposited no eggs, although many of them lived twenty days or longer, while control flies fed on blood did lay eggs.

The incubation period in eggs kept at from 16 to 25 C. (from 60.8 to 77 F.) varied from two to five days and was commonly three days. The newly hatched larvae buried themselves in the breeding-material, being strongly negatively heliotropic. The larvae required much moisture. They grew slowly, compared to house-fly and flesh-fly larvae, reaching full growth in from fourteen to twenty-six days (usually about eighteen), depending on moisture, light and temperature. Before pupation the larvae crawled up into the drier layers of the decaying vegetable matter in which they developed and became pupae in less than one hour after they had begun to change. We found the pupal period at from 23 to 26 C. to vary from six to twenty-six days, but usually to lie between nine and thirteen days.

The total time, at 21 C. from the laying of the egg to the hatching of the adult fly was from thirty-three to thirty-six days, as observed in five individuals.

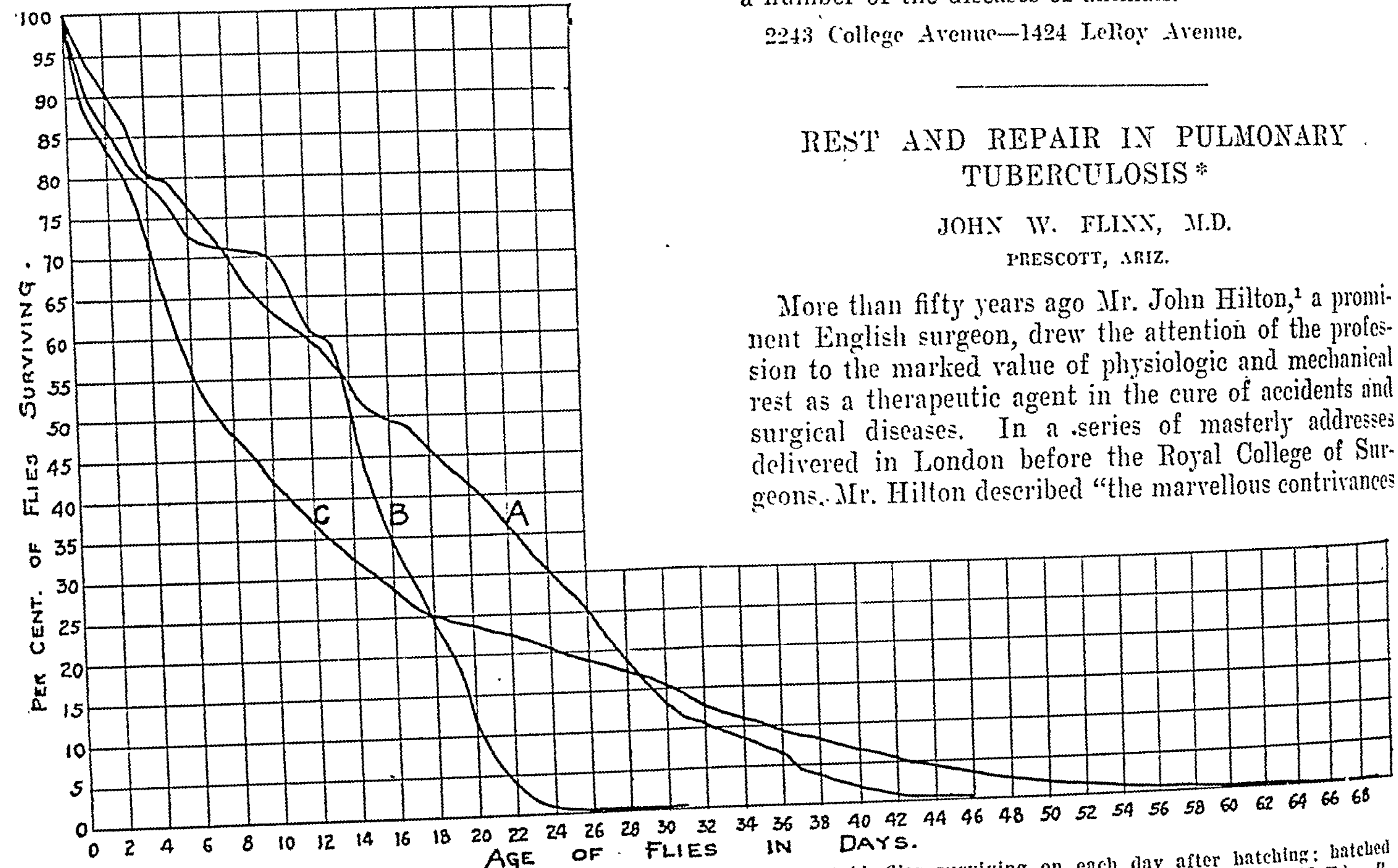
The length of life of the flies, under the favorable conditions of feeding in our principal experiments, was, on the average, twenty days. The maximum was sixty-nine days, and was observed in a female fly.

The three longevity curves plotted in the accompanying chart show the percentage of survivors at all ages in three large groups of flies under different conditions of season and temperature.

CONCLUSIONS

1. In a series of seven experiments in which the conditions were varied, we were unable to transmit poliomyelitis from monkey to monkey through the agency of the stable-fly.

2. Further experimentation may reveal conditions under which the stable-fly can readily transfer poliomyelitis, but the negative results of our work and of the second set of experiments of Anderson and Frost[4] lead us to doubt that the fly is the usual agent in spreading the disease in nature.



Longevity chart of Stomoxys calcitrans: A, percentage curve of 1,300 stable-flies surviving on each day after hatching; hatched between December 12 and 20, 1912; used in Experiment 1; room temperature, usually between 12 and 20 C. (53.6 and 68 F.). *B*, percentage curve of 650 stable-flies surviving on each day after hatching; hatched between Dec. 22, 1912, and Jan. 3, 1913; used in Experiment 3; insectary temperature, from 23 to 36 C. (from 73.4 to 78.8 F.). *C*, percentage curve of 2,000 stable-flies surviving on each day after hatching; hatched between April 7 and 18, 1913; used in experiments 5, 6 and 7; room temperature, usually between 12 and 20 C.

3. On the basis of the evidence now at hand we should continue to isolate persons sick with poliomyelitis or convalescent, and we should attempt to limit the formation of human carriers and to detect and control them. Screening of sick-rooms against the stable-fly and other flying insects is a precaution which should be added to those directed against contact infection, but not substituted for them.

4. The measures used in suppressing the house-fly are not applicable to the control of the stable-fly owing to its different breeding habits and food-supply. Methods should be devised for diminishing the numbers of stable-flies as they are a great annoyance to cattle and, in all probability, are capable of transferring and inoculating a number of the diseases of animals.

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REST AND REPAIR IN PULMONARY TUBERCULOSIS *

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More than fifty years ago Mr. John Hilton,[1] a prominent English surgeon, drew the attention of the profession to the marked value of physiologic and mechanical rest as a therapeutic agent in the cure of accidents and surgical diseases. In a series of masterly addresses delivered in London before the Royal College of Surgeons, Mr. Hilton described "the marvellous contrivances which Nature has employed for securing rest to the different organs of the body when in health," and "the instinctive promptings of Nature to secure rest on the occurrence of accidents or diseases."

Mr. Hilton says:

> "So intimate is the association between rest and growth as to make them appear on a superficial view to stand to each other in relation of cause and effect. Accurate observation of the animal and vegetable world certainly reveals their perpetual coexistence; and growth as a rule seems *pari passu* with physiological rest." "A homely illustration may be found in the fact that in infancy the child who sleeps much mostly thrives. *Mutatis mutandis* the observation is equally true that the wakeful restless child seldom displays the evidence of active nutrition. Doubtless all will admit that in infancy development is in its highest state of activity and

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[4] Anderson, John F., and Frost, W. H.: Poliomyelitis: Further Attempts to Transmit the Disease through the Agency of the Stable-Fly (*Stomoxys calcitrans*), Pub. Health Rep., Washington, May 2, 1913, xxviii, 833.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Hilton: Rest and Pain. Geo. Bell & Sons, London, 1907.

that the healthy infant passes the greater portion of its life in a state of rest and sleep. Growth—the renewal of some parts and the fresh development of others—seems thus to claim sleep and rest as its helpmates." "Growth is the antetype of repair prefiguring the physiological capabilities of existing structures to repair themselves." "Repair is but the repetition of growth. The same elements, the same kindred conditions are necessary to the same results. Rest is the necessary antecedent to the healthy accomplishment of both repair and growth."

He pointed out that in acute and chronic inflammations of the soft tissues, injuries to bones and joints, and in most surgical diseases the object of treatment is to bring about rest of the injured parts. Surgeons soon began to recognize the supreme importance of rest as a therapeutic agent, and to-day[2] "the surgeon entirely relies on rest, after his operation, to heal the wound he made."

REST IN MEDICINE

Physicians, on the other hand, have been wondrous slow to appreciate what rest can accomplish in preventing and curing disease. In 1874, Weir Mitchell began to develop his rest treatment for neurasthenia and hysteria, and through his influence absolute rest in bed was first given a recognized place in medical therapeutics. In acute fevers from whatever cause, in chronic diseases of the heart, of the kidneys, and lately in chronic gastro-intestinal affections, rest in bed is an integral part of treatment; and yet it has apparently occurred to but few that the same treatment is just as necessary in chronic disease of the lungs.

Although Hilton in 1860 demonstrated conclusively the value of physiologic rest in acute and chronic inflammations with or without abscess formation, and although the experience of surgeons from that day to this has served only to verify and emphasize these views, the profession has apparently utterly failed to recognize the fact, that physiologic rest of the lungs must be of the very first importance in the treatment of chronic inflammation and abscess formation in the lung tissue. One will search American medical literature in vain for any extended reference to the value of rest in the treatment of pulmonary tuberculosis, or for definite information regarding its use. With the exception of the little work[3] by Norman Bridge published in 1903 and a few scattered papers, practically nothing has been written on this important subject. Bridge was strongly impressed with the value of rest to the lung tissue, but unfortunately was content with mechanical measures for producing this rest, such as "to inflate the pleural cavity with sterile air or nitrogen gas after the manner of Murphy" or "by means of adhesive bandages applied about the chest to nullify the motion of the ribs on the affected side" or "a perfectly fitting unyielding jacket or splint embracing one side of the chest," either of the latter two be worn for several months. While such mechanical measures are of undoubted benefit in some instances, they are applicable only to a limited number of cases. Nevertheless, these views were a marked step in advance, and probably did a great deal toward suggesting the larger possibilities of physiologic rest of the whole structure of the lung.

Within the last two years the operation of artificial pneumothorax has been revived, and experience has shown it to be of distinct value but only in a limited field. Perhaps the greatest ultimate good which will come from this method of treatment will be its effect in teaching the profession the value of rest to the lung in all cases of pulmonary tuberculosis. As Bushnell[4] says: "The best proof of the value of rest in progressive tuberculosis is furnished by the results of pneumothorax, which are, that the diseased lung is greatly benefited by compression; but if the non-compressed lung contains too much tuberculosis it is damaged by the increased activity forced on it by the collapse of its fellow. The experience in pneumothorax thus constitutes a beautiful double proof of the efficacy of rest."

REST IN BED

The questions naturally arise: Is it possible to give physiologic rest to the lungs? If so what means are at our disposal to induce such rest? So intimately are the lungs and heart, in their functions, connected with each other and with every other organ of the body that it is impossible to rest them without giving rest to the body as a whole. Consequently the recumbent position is the one means of giving rest to the lungs. Rest in bed alone will give the required rest to the diseased lung tissue. In pulmonary tuberculosis the word rest should always signify rest in bed. The very first rule in the treatment of pulmonary tuberculosis should be: Put your patient to bed!

For what class of cases should rest in bed be prescribed? For absolutely every case without exception. So soon as manifest tuberculosis can be detected in any patient, that person should be confined absolutely in bed for at least one month, and in the great majority of cases for two months, and this regardless of whether there is fever or not. This preliminary treatment of a month or two in bed will accomplish more than any other factor in starting the patient on the road to permanent recovery. Rest in bed improves the appetite, aids digestion and assimilation, increases the weight, lowers the temperature, slows the pulse and respirations, lessens the cough, decreases the expectoration, allays nervous irritability, and conduces to natural sleep. Surely a therapeutic measure which will produce such results should be used in every case without exception.

GRADED REST

And rest should be prescribed in definite quantities, just the same as drugs and other therapeutic agents. Written instructions should be given patients stating what degree and how many hours of rest should be taken each day. It is a distinct advantage to recognize three grades of rest in bed: 1. If the temperature does not go above 100 F., or the pulse above 100, at any time during the day, the patient may be allowed to get up in his bathrobe and bedroom slippers to make his toilet in the morning, and to go to the bathroom to evacuate his bowels and bladder, provided the bathroom is immediately adjoining. His meals should be eaten sitting up in bed. The remainder of the day should be spent lying flat. If the temperature is not above 99.5 F., reading in the recumbent position may be indulged in for a few hours each day. 2. With a maximum temperature between 100 F. and 101 F., or a pulse persistently above 100, the toilet should be made in bed, a urinal used and the patient allowed out of bed only to move his bowels. No reading should be permitted. 3. When the temperature reaches over 101 F. or the pulse 110 at any hour of the day, the patient should not be permitted even to sit up in bed. The urinal and bed-pan should be used, and the patient should be washed and fed by a nurse. A temperature over 102 F. demands, in addition, the ice-cap, and, if necessary, cold sponging.

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[2] Leach: Therap. Gaz., Feb. 15, 1913.

[3] Bridge: Tuberculosis. W. B. Saunders & Co., Philadelphia, 1903.

[4] Bushnell: Personal letter.

When a certain grade of rest does not bring the maximum temperature below 100 F. in two weeks, the next higher grade of rest should be tried. Loss of appetite, indigestion, lassitude, sleeplessness, and nervous irritability are all indications for a greater degree of rest.

Objection will probably be made that individualization should be used; that hard-and-fast rules can not be formulated which will apply to every case. This is only partially true. Individualization *is* important, but individualization based on definite principles. Moreover, the power to individualize properly comes only with experience; the inexperienced should follow the general rules closely and allow exceptions to them only when it has been definitely established that the rule is not proving beneficial.

TUBERCULOSIS GENERAL AS WELL AS LOCAL

In searching for facts which will enable the physician to determine how much longer than the initial one or two months, rest in bed should be continued, it is important to remember that pulmonary tuberculosis is, except in its very early incipiency, a constitutional disease affecting the whole body, as well as a local disease of the lungs. In addition to the local symptoms (cough and expectoration, and often pain, hemoptysis, and dyspnea) there are present in a large proportion of cases, loss of appetite, lassitude, elevation of temperature, acceleration of pulse, loss of weight, chills, and night sweats. It is these evidences of systemic infection which especially demand rest in bed, and the rest should be continued until all constitutional symptoms have disappeared. Keep the patient in bed until the temperature and pulse are normal and until he has about regained his normal weight. While, in most early cases, the constitutional symptoms will disappear after the first one or two months in bed, later cases require four and six months, and often a year or more, in the recumbent position. I have seen one case in which the disease was arrested after three consecutive years in bed.

Not only is rest in bed of supreme importance in the treatment of active tuberculosis of the lung, but it continues to be a valuable remedy after the lung lesion has become quiescent and the patient is taking active exercise. Two hours absolute rest in bed in his night clothes should be given every patient under exercise each afternoon, until he returns to his former work. The experience of Patterson[5] of Frimley is strong evidence of the value of rest in bed after active exercise, while his observations on the effect of his "complete immobilization" in bed to combat the effect of what he terms "excessive auto-inoculations" constitute one of the strongest proofs extant of the great value of absolute rest in bed in the treatment of systemic infection in pulmonary tuberculosis.

And even after the patient has returned to his former occupation, one hour's rest in the recumbent position preferably in bed in his night clothes after the noon-day meal, should be insisted on, unless his circumstances are such that it seems absolutely impossible for him to do so. In all cases, his evenings should be spent lying in the recumbent position and his Sundays should be spent in bed for some months after returning to work. In many cases, a day in bed in the middle of the week, is necessary to enable the patient to attend properly to his work during the remaining five days. The observance of these rules will do much to prevent such recurrences of the disease as have been so woefully prevalent in the past, recurrences which came principally because patients were not advised of the necessity for a large degree of rest for months and often years after returning to their former occupations.

THE ESSENTIALS OF TREATMENT

Although much good work has been done in the last ten years on the influence of serums, vaccines, and other special treatments in pulmonary tuberculosis, so much has been written along these lines that the profession is apt to forget that fresh air, good food, and rest are still the sine qua non of treatment in this disease. They are the principal working tools of the craft, and surely it is the part of a master-workman to perfect himself in the use of these, rather than to neglect them in experimenting with instruments many of which are of doubtful utility.

The truly wonderful therapeutic effects of fresh air and good food have long been known to the profession, but rest is an agent the use of which physicians have been slow to recognize. As all three are of such importance it is indeed difficult to compare them. Perhaps one can not better express their relative importance than by a paraphrase. In the treatment of pulmonary tuberculosis there now abideth fresh air, good food, rest, these three; but the greatest of these is rest.

ABSTRACT OF DISCUSSION

Dr. Charles L. Minor, Asheville, N. C.: The truths of medicine are so beautiful that when we realize any special one we are apt to be absolutely blinded by it to the existence of other truths. I am glad to hear the importance of rest emphasized before a body of medical men, because the great sin in the treatment of tuberculosis is abuse of exercise. We can also have the abuse of rest, and I am afraid that unless there be some limitation of the extremes to which doctors would push rest, it might become somewhat of an abuse, although, as I say, it is distinctly safer to err on this than on the other side. There are exceptions to everything and when the doctor says that in every case, from the beginning, the patient should always have extreme rest in bed, he is going too far. We realize perfectly that, whatever the state of the patient, he should be at rest for two or three weeks so that the physician can study the case. If the infection is beyond a certain degree, moreover, we realize the importance of rest for a longer time. The tendency to keep the patient absolutely at rest for too long a time is apt, in my experience, to unfit him for a return to work, for which he must be trained and prepared by varieties of exercise. I have seen a number of patients treated by competent men who have been kept at rest and fattened up so unduly that they could not resume work. I would not force exercise too far, but it seems to me that Dr. Flinn is extreme in stretching rest too far. Let us strike a happy medium.

Dr. S. A. Knopf, New York: I wonder if Dr. Flinn has thought of tuberculosis also as a social problem and what it would mean and what cost it would involve to have the more than one and a half million tuberculous patients in the United States put to bed, some for six months, some for a year, and some for three years. It is now well known that for every one of the two hundred thousand deaths we have annually from tuberculosis in the United States we have about eight living tuberculous patients, a goodly number of them still doing their work and supporting their families, others without families supporting themselves, and thus not a burden to the community. Professor Cabot has inaugurated a wonderfully efficient social-service system in connection with the work in the Massachusetts General Hospital. He, of course, looks after the physical welfare of the patients, but he also investigates thoroughly their social conditions and judiciously watches and guides the earning activity of the patient. Those who are able are permitted to work only enough not to do them any harm, and that is the policy all modern phthisiotherapeutists are bound to follow. I agree with Dr. Flinn that a patient whose temperature is 100 or more must be in bed and rest, but not every case of tuberculosis is febrile and the patient need not be in bed. In the Municipal Sanatorium at Otisville we have several hundred patients, nearly all of them in the earlier stages of the disease. We have few nurses and servants. The institution owes its inception to Prof. Hermann M. Biggs of New York; it is he who conceived the idea of utilizing the patients' ability to work, not only for their own good, but also to reduce the cost of their maintenance. The result is that we have a goodly number of cures and that the Otisville Municipal Sanatorium is considered to-day one of the most economically and successfully conducted institutions in the United States. When the patient arrives at Otisville, he is carefully examined and, whether febrile or afebrile, allowed to rest for a week. After a while, if continually afebrile, he is put to work. He is carefully watched by the physician of his division and only with concomitant improvement of his condition are his working hours increased in number. The experience of Patterson at the Frimley Sanatorium in England, King of Loomis, and, if I am rightly informed, of Beach in the sanatorium of Minnesota, and the work in Otisville and many other institutions would indicate that occupation therapy or autotuberculin inoculation in pulmonary tuberculosis is a most valuable means of accomplishing a cure in a goodly number of cases. Of course, we must individualize.

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[5] Patterson: Auto-Inoculation in Pulmonary Tuberculosis, James Nesbeth & Co., London, 1911.

DR. JOHN RITTER, Chicago: Dr. Norman Bridge of California, at the tuberculosis meeting in Washington some years ago, brought out the fact that we are too much in the habit of having our patients practice pulmonary gymnastics, when we should institute and advise pulmonary rest. I believe that when the lung is incapacitated we should use judgment and institute rest, as a surgeon does in the case of a tuberculous knee-joint or hip-joint. The lung is damaged, the heart is weakened, and the toxic condition of the body all require rest. I think that Dr. Flinn is right, but that this method of rest may have a tendency to make a large class of lazy, idle tuberculous persons.

DR. F. M. POTTENGER, Monrovia, Cal.: Dr. Flinn, in my estimation, has laid down a carefully devised plan by which he no doubt obtains excellent results. Every man has a certain way of working and by his method arrives at certain conclusions and obtains certain results. This does not necessarily mean that his method is best. It probably is best for him, but we must be careful not to draw a general conclusion from any one set of observations. I use a great deal more rest in treating tuberculosis than I ever did before. I put patients to bed now that I would not have thought of putting to bed several years ago. I would advise all who are attempting to treat men and women who have been leading active lives to put them to bed when beginning treatment. This is the easiest way to gain control of the patient. If patients are permitted to be up and around it is almost impossible to get thorough control of them. I put patients to bed for at least a week whether they have fever or not. If I find that they are not adjusting themselves correctly to the enforced rest, I keep them there longer. I have taken men of affairs who had been extremely busy and put them to bed for one or two months and in this way changed them from nervous, energetic business men to cooperating patients. The greatest thing in the treatment of tuberculosis is to individualize. If there is any place where common sense is needed, it is in treating these chronic cases, in which you are compelled to put up the fight, not only with the patients but also for them, to guide them in every act of their life, not for a few days or a few weeks, but for months and often for years. Tuberculosis is not the only question to consider. It is an accident that has happened to a human being. If this is borne in mind and the patient treated as well as the disease, it will add greatly to successful treatment.

DR. THOMAS H. HAY, Stevens Point, Wis.: It seems to me that there has been a misconstruction of Dr. Flinn's paper on the subject of rest. It has been said that he did not display any special effort to individualize in the application of rest. It seems to me he did individualize, for he stated, as I remember, that he treated some patients in bed for one week, some for two weeks, some for three months and some for even a year, and he does not make it a rule to treat every patient in bed for three years; that was a single case. My own experience is that there is no therapeutic agent which is so neglected as the application of rest to the tuberculous patient. Why the social and economic aspects of tuberculosis should influence the application of therapeutic measures I cannot understand. It has no more to do with the case than has the social aspect of typhoid, pneumonia or any other disease. I cannot understand why tuberculosis should be treated in such an imbecile and idiotic way by the medical profession as it has been for generations. It is a common thing to see patients go to their graves without any rest; in fact, it was a common observation that in previous years a considerable number of tuberculosis patients died in a chair, and many now die sitting up, if they do not die on the street. I think that Dr. Flinn's attitude on the question of rest is perfectly reasonable. We should do as Dr. Pottenger says, and I am glad to see that he has learned the value of rest and is employing that knowledge more than he did in former years. I am a firm believer in the broader application of rest. I have seen many cases which responded to the rest treatment in three weeks and some in three months. I have in mind a case in which the patient was in bed for about sixteen months, and to-day he is perfectly well, doing an amount of work proper for a normal, well-regulated person. Dr. Flinn should have stated what he understands by absolute rest, and the proper application of the principle of rest and what he means by it. Dr. Dewey of Wauwatosa remarked to me that the majority of people make hard work of absolute rest. The majority of people do not know what it means. It means rest in bed, without visitors, without reading, without talk and without thought, if that is possible. I tell the patients to go to bed and count the knots in the ceiling, because it is no mental or imaginative effort to do so.

DR. RICHARD C. CABOT, Boston: So much has been said about rest that I want to put in a word. Think what happens to an arm if you put it in splints. Atrophy of the muscles occurs, and when you take a roentgenogram of the arm you wonder if the bones are diseased. Rest sometimes does great harm. It is not the only physiologic principle of healing. Exercise is another and often more important principle. Rest may mean destruction and the breaking down of tissue. These theoretical conclusions, however, should not influence us in the practical question of treating tuberculosis. The only question is, does it help? If the absolute rest treatment can be shown by Dr. Flinn, or any one else, to produce better results than any other plan, then of course we must do the best we can to get these better results. I think most of us who have treated tuberculosis know that we have to individualize. We have to consider the psychic side—the mental side. That is what we mean by the social problem. There are some people who become so neurasthenic and so lazy as a result of our treatment that we give them back to society in a worse condition than when they came to us. It is doubtful whether we have done the community any good by restoring them to society as so-called "cured" persons.

DR. JOHN W. FLINN, Prescott, Ariz.: I am firmly of the opinion that it is a great pity that men holding prominent positions in the profession do not emphasize the rest treatment of tuberculosis more than they do. I believe that they are responsible for a great deal of harm that is being done throughout the country, which we notice especially in the Southwest. In regard to individualizing, it seems to me that in the past, the cart has been put before the horse. My plea is to lay down general principles, to lay stress on those principles, and, after we have learned them thoroughly, then begin to individualize. One of the greatest faults with the treatment in the past has been that we have been individualizing without principles. Dr. Cabot has asked for results and I believe that I can show them. In spite of everything that has been said to the contrary, I am still of the opinion that in active tuberculosis rest is the most powerful therapeutic agent we have at the present time. And I have serious doubts as to whether it is possible to push it to extremes so long as the disease is active. You might notice that the word "exercise" was not mentioned in the paper. When it is time for exercise I am as firm a believer in it as anybody, but I do not believe in exercise so long as the tuberculosis is active. So long as it is active I do not believe you can push the rest to an extreme.

EPIDIDYMOTOMY

THE RADICAL OPERATIVE TREATMENT OF EPIDIDYMITIS

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No operative procedure which has been recently suggested has given more gratifying results to both the surgeon and the patient than that for the relief and cure of acute epididymitis. The comparatively easily attained results are all that could be desired by the surgeon and are almost miraculous in the immediate relief they bring to the suffering patient. The relief is so immediate as to render the continuance of the internal administration of sedatives and opiates as well as the loathsome external applications entirely unnecessary. After the operation, the abatement of the fever takes place in twenty-four and not more than forty-eight hours, as a rule, and in from four to eight days the patient is able to resume his usual duties if not too violent. In view of these facts, and since I believe that this operation is devoid of risk to the patient's life, if accomplished with proper aseptic surgical surroundings, it seems to me that it should be the procedure of choice.

Epididymotomy (incision and opening of the epididymis) is an entirely rational procedure based on an accurate study of the pathology of the existing lesions. The catarrhal inflammation present causes the secretion of a varying quantity of serous fluid by the tubular glands of the epididymis, and frequently there is an exudation of some of this fluid into the tunica vaginalis, forming a hydrocele. The usual symptoms of the disease, swelling, tenderness, pain, dragging, etc., are proportionate to the amount of fluid secreted. Consequently, the liberation of the fluid from its sacs of restriction immediately relieves all symptoms.

It is customary for patients with epididymitis to appear for treatment some days after the onset of the symptoms, when pus and abscess formation will in all probability be present. If, however, the disease can be arrested in its first stages by the method under consideration, this pus and abscess formation can usually be avoided. Thus it argues that in an attack mild in character and seemingly amenable to medicinal treatment, the operative plan is more expedient, obviating as it does the possibility of future development of pus and abscess; but if the disease has progressed to the point of pus, this pus is usually confined in the intertubular connective tissues, and the abscess formed is small. It is rare that the focus of the abscess is large except in old and neglected cases. Again, the judicious method of treatment is to open the abscess and liberate the pus.

The operation which I perform is one of comparative simplicity, being a modification of that suggested by Hagner of Washington, D. C. The time required for its accomplishment is short, rarely being more than from five to ten minutes. The preparation of the patient is the same as that for the administration of a general anesthetic, as local anesthesia is not advisable. The local sterilization of the scrotum may be accomplished in any satisfactory manner, but I have always used the simple method of applying a weak alcoholic iodin solution (from 2 to 3 per cent.) after the parts were properly shaved; always with the precaution of applying the iodin solution only after the skin is thoroughly dried.

The incision in the scrotum is made over the most prominent portion of the swelling. It varies usually from 2 to 4 inches, but should be of sufficient length to allow of the delivery of the testicle, which is wrapped in cloths moistened with warm sterile water or saline solution. A small incision is made in the tunica vaginalis which allows the fluid of the hydrocele to escape. Then the portion of the epididymis which is inflamed is punctured in numerous places with a blunt probe or grooved director. This relieves the tension by allowing the restricted fluid to escape. If pus is present, it will be seen escaping from the punctures, in which case an incision is made in the epididymis in its longitudinal axis to allow free drainage. A probe directed into the pus focus with the addition of mild pressure will free the focus of the greater parts of the pus. After thorough washing of the organ with warm normal saline solution, a short drain composed of a half dozen strands of silkworm gut is inserted into the pus focus. The testicle is returned to the scrotum, which has previously been cleansed with warm normal saline solution, the subcutaneous tissues united by one or two sutures of small catgut, and the skin united by silkworm gut sutures, with the drain passing out at the lower angle of the wound. When the swelling is great, it may be necessary to observe certain precautions to prevent the silkworm gut sutures from tearing out of the inflamed friable tissues, in which case I make use of the button suture, which fulfils this requirement admirably.

After the operation, a simple gauze dressing is applied which I change at the end of forty-eight hours, when I remove the drainage, if present. During this period a T bandage supports the scrotum. One other gauze dressing is usually all that is necessary and is removed on the fifth or sixth day following the operation when the silkworm gut sutures are removed. Most patients are fitted with suspensory bandages and allowed to be out of bed from the third to the fifth day and return to their usual duties from the fourth to the eighth day.

If no pus focus is discovered, the testicle is returned to the scrotum with no drainage, the convalescence being simpler and quicker.

The immediate results of this operation in acute cases are astonishing. The pain vanishes at once, the swelling disappears rapidly, and the tenderness subsides with the swelling. The patient is comfortable from the time he recovers from the anesthetic.

The remote results of the operation are just as remarkable when it is considered that relapses never occur. In a series of one hundred cases, in which I have operated in twenty-five, I know of no relapses. The most gratifying results occur in acute cases or in cases in which the tissues have not become permanently swollen and indurated. The pain is relieved instantly in all cases, but the less the induration, the more rapid and complete will be the return to normal in size and shape of the testicle, and the less apt there is to be occlusion of the vas deferens and the epididymis with the resulting sterility, especially if the attack be bilateral.

I am unable to state the influence of epididymotomy on sterility. But from the logical point of view it appears to me that a patient will have a far greater opportunity to recover without the occlusion of the vas deferens or epididymis if the continuity of the inflammation is aborted and the products of the inflammation are removed. I cannot understand how the operation itself would cause the obliteration of either the vas deferens or the epididymis. Any influence it has shortens the course of the disease and carries away the products of the inflammation. Doubtless it has the same beneficial effect on the retaining of a patulous canal as it has on the disease itself.

In conclusion, it is my belief that epididymotomy should be the treatment of choice in all cases of epididymitis, whether caused by traumatism or by infection with either the gonococcus or other organism. Every case from the mildest to the most severe should be operated on as:

1. The relief from pain is instantaneous.
2. Internal administration of sedatives and opiates and loathsome external applications are unnecessary.
3. The abatement of fever takes place in from twenty-four to forty-eight hours.
4. Pus and abscess formation is prevented.
5. Swelling, tenderness and other symptoms rapidly disappear.
6. There is no tendency to relapse.
7. It insures a minimum of time lost from usual activities.
8. There is probably a smaller percentage of sterility following the disease.

MENTAL DEFICIENCY AND DELINQUENCY

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Just now, while the vice question is being considered from so many sides and various causes for sexual immorality are being studied, with the hope of improving conditions if possible, it will not be amiss to direct attention to one group of young girls who for some reason have been unable to cope with the conditions confronting them and so have "gone wrong." Special stress is being laid on such causes as inadequate wages, and natural immoral tendencies on the part of the girls themselves as being important contributory factors. The State Training School for Girls at Geneva has at present a population of approximately four hundred children, the vast majority of whom have been committed for sexual immorality, and of whom, on admission, nearly 60 per cent. are suffering from a venereal disease.

Why has all this immorality occurred? At present it is of course impossible to answer this question absolutely, but there is one great cause which has never received the consideration to which it seems entitled, namely, mental deficiency.

Most of the children sent to Geneva have been held as purely delinquent. With the exception of those coming from the Juvenile Court in Chicago, none have received a mental examination, and if it has been recognized that they are not "bright," it has been noted merely as an incidental fact, not as having a bearing on the child's delinquency. The child is sent to Geneva with the idea that a year or two, or perhaps five, of hygienic existence, with good food, regular hours of sleep and an abundance of fresh air, will eliminate the immoral tendencies and give that physical and mental impetus which may make possible a wholesome, useful womanhood.

It will be well to explain here that by no means all of the girls who come into the courts find their way to Geneva. With the establishment of juvenile courts for the hearing of all cases of this kind, there has developed a tendency to continue the hearings from time to time, either allowing the child to remain in her own home or placing her in some suitable family home subject to the friendly supervision of a probation officer. So successful has this system become that only a comparatively small proportion of the girls appearing in the juvenile courts ever enter an institution, and those who do finally arrive in Geneva are, as a rule, incorrigible offenders whom the courts have entirely failed to control. As an exception to this general type of old offenders may be taken a certain number of cases sent from communities which have no system of juvenile supervision, and which frequently commit girls for very minor offenses or even because of simple financial dependence. This custom of sending dependent children or those guilty of the mildest offenses to an institution, compelling them to associate there with hardened offenders and degenerates, cannot be too severely condemned. The majority of the inmates in Geneva, then, are those who have failed to respond to the ordinary measures of supervision possible in their own homes and constitute a comparatively small percentage of all of the cases which the courts handle.

Simple observation and daily work with these girls showed a surprisingly large number who were quite irresponsible and were totally unable, even after having been given years of careful attention, to do the work of normal children either in or out of school. Recognition of this fact led to the routine application of the Binet tests, as modified by Dr. Goddard for American children, to all new subjects admitted, for the purpose of making a rapid estimate of the mental status of the children. The results obtained were startling and indicated that mental deficiency was associated with delinquency in a far larger number of cases than even the most pessimistic had supposed.

Of the total number examined, 105, or 89 per cent., were graded as feeble-minded, that is, showed a retardation of three years or more; seven, or 6 per cent., were backward, being one or two years retarded; and six, or 5 per cent., were graded as normal. It will be remembered that dependent as well as delinquent children may be sent to Geneva, and since three of the normal and five of the backward children were simply dependent, the number of feeble-minded among the delinquent become even more striking. Of the 118 children admitted, fourteen were committed as dependent or as uncontrollable at home, and none of these had been sexually immoral. Of the 104 remaining, all of whom had been sexually immoral, 101 were graded as feeble-minded and three as normal. According to the Binet tests, then, 97 per cent. of the children sent to this institution because of sexual immorality are feeble-minded as well.

Of this group of delinquents by far the larger proportion are of the weak-willed, irresponsible type, who react readily to whatever environment may surround them. These girls are usually friendly and anxious to please everyone and frequently do very well under careful supervision, but when left to their own resources they are a constant menace to themselves and to society. As an example of this type we have Pearl S., who was 18 years old when sent to Geneva and for some months previously had been working at a meager wage in an overalls factory. During this time she had repeatedly been immoral and had become infected with both gonorrhea and syphilis. She did not know why she had been "bad," but "couldn't help it." The court committing her understood her wretched physical condition and sent to Geneva the recommendation that she be allowed to return to her home after having received thorough treatment for these diseases. Mentally this girl graded as an imbecile. Of a decidedly different type is Helen L., who, although only 10 years old, has most vicious and aggressive sexual tendencies. She is not the passive victim as is Pearl S., but so strong are her perverted impulses that she must be watched constantly to keep her from indulging them. Mentally this child, also, is an imbecile.

Besides these two types, both of which are not uncommon, although the first predominates, there occurs a third very puzzling and very dangerous type. These are the children who have been variously designated as constitutional inferiors, moral imbeciles, and so on. Of the cases examined, three apparently belong to this class. On casual contact and as graded by the Binet tests, these girls show no evidence of mental defect, and except for severe venereal infections they have no evident physical abnormality. All had bad records, were so-called "repeaters"; that is, had been brought into court again and again. Two of them, both 16 years of age, were inclined to be boastful of their escapades and pleased at the privilege of reciting their experiences. Neither is of an unstable, vacillating disposition, but both have since shown themselves to be natural leaders, easily controlling the activities of the girls with whom they are thrown in contact. The first of these three girls, Margaret M., repeatedly said that she was "bad" because she wanted to be, and that she was going back to her old life as soon as she left Geneva. The second, Hannah D., some time after her admission, told the following story: Her father controlled a teaming business and had several teamsters at work under him. When Hannah was a child of but 8 or 9 years he used to take her with him while he paid his men. After several visits of this sort, the father began to permit the child to go to the barn unaccompanied and distribute the wages; this she did for many months. Looking up here from her narration, she said, "You know what those teamsters are. How could I help but be bad?" Whether this story is sufficient explanation of the cause of this girl's immorality cannot be told, but such associations at a very impressionable age must certainly have had a strong influence on her character.

The third girl, Florence J., is more easily understood. She is a bright, nice-looking girl of only 15 years, but is easily influenced and very superficial. When questioned as to the reason for her wrong doing, she asserted that it was because "the rest all did" and that she "couldn't help it."

TABLE 1.—CONSECUTIVE ADMISSIONS

Total No. examined	118	100 per cent.
Normal	6	5 per cent.
Backward	7	6 per cent.
Feeble-minded	105	89 per cent.

TABLE 2.—SEXUALLY IMMORAL

Total No.	104	100 per cent.
Feeble-minded	101	97 per cent.
Normal	3	3 per cent.

SUMMARY

1. Of the 104 girls committed to Geneva as sexual delinquents, 101, or 97 per cent., were feeble-minded according to the Binet tests. This would seem to prove mental deficiency to be an important causative factor in the causation of sexual immorality and to indicate the routine employment of a mental examination for all children of this class in order to determine how far they may be held responsible.

2. Of the feeble-minded, comparatively few are aggressive sexual perverts, but most are helpless victims, who should have protection, and who, under close supervision, may lead useful, contented lives.

3. By no means all delinquent girls are feeble-minded, but probably those not amenable to supervision and direction in their own homes are largely so.

State School and Colony.

FURTHER OBSERVATIONS WITH A SACCHAROMYCES *

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In August, 1912, I published a paper[1] relating the facts in connection with my observation of fifteen cases from which an organism was isolated which I identified as a saccharomycete. This organism, which was pathogenic for white mice, all varieties of rabbits, guinea-pigs and rhesus monkeys, had been found in the sputum of patients with anomalous lung conditions, and also in a tonsil-membrane, a vaginal discharge and in a skin abscess. In most of these cases it was found mixed with other organisms, but in a few it was the only apparent cause of infection, and in these cases a disappearance of the organism was followed by alleviation and disappearance of symptoms. That report left much to be desired in the way of clinical observation of cases, necropsy reports and blood examinations. Since that time, other cases have come under my observation which have been more carefully studied, two of which I cite here.

Case 1.—Miss A., aged 61, referred by Dr. Huntington, was a native of Cleveland, where she resided most of her life. From childhood she had had frequent attacks of what she had been told was pneumonia. For the past three years she had been suffering from a chronic cough. Two of her family had died twenty-five years previously with what was then called "consumption," and this woman believed herself to be a victim of the same disease, though she admitted that experts both in Cleveland and in Chicago had examined her sputum for tubercle bacilli, but always with negative results. Early in November, 1912, she had an attack of pneumonia, and her physician, fearing that she could not endure the winter in Cleveland, urged her removal to a warmer climate. Accordingly she left her bed and came directly to California, reaching Pomona, November 14.

The patient was very weak but had borne the journey fairly well. She was tall, slender and stooping, and weighed but 83 pounds. Clinical examination showed marked involvement of the left lung, which seemed to be mostly consolidated. Posteriorly, there was pleuritic pain with rigidity of the muscles of the back. The temperature, which at first ranged from 98.4 to 102.6 F., finally remained stationary at 99.4. The pulse varied between 80 and 102 and was sometimes irregular and weak. The respiration was from 20 to 26. The cough was exhausting and the voice husky, with sometimes complete aphonia. The sputum was thick, tenacious, yellow-greenish, and streaked with blood. Smears were made frequently and stained for tubercle bacilli, but always with negative results. Cultures from this sputum revealed

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*Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

[1] Breed, Lorena M.: Some Clinical and Experimental Observations with a Saccharomyces, Arch. Int. Med., August, 1912, p. 108; abstr., The Journal A. M. A., Sept. 7, 1912, p. 825.

a pure growth of the saccharomyces. The von Pirquet tuberculin test was negative. A skin-test with the yeast extract was slightly positive, and the patient's serum agglutinated the organisms in a dilution of 1:40. The blood examination showed hemoglobin, 60 per cent.; erythrocytes, 4,576.000; leukocytes impossible to count because of the amount of yeast-cells; small mononuclears, 32 per cent.; large mononuclears, 5 per cent.; polynuclear neutrophils, 60 per cent., and polynuclear eosinophils, 3 per cent. The patient made some improvement, and, December 9, went to Los Angeles where she had a relapse and died Jan. 12, 1913.

On account of the distance from Pomona, some time elapsed before permission was obtained for a partial examination of the lungs. This occurred twenty-four hours after death, and after the body had been partially prepared by the undertaker. On opening the thorax the heart was found to be greatly distended, but no account was made of that, as it was found to contain principally a clear fluid. The pleural cavity on the left side was completely obliterated by adhesions. Posteriorly and laterally and especially about the apex, these adhesions were so firm as to require a knife to separate them. Anteriorly, they were more recent and easily broken with the fingers. The left lung was firm, grayish-purple and consolidated throughout. It showed recent adhesions anteriorly and old adhesions posteriorly. The cut surface presented a solid, grayish-purple granular mass, from which exuded at various points a purulent fluid. There was a good deal of fibrous tissue and there were numerous small abscesses, but no cavity formations. Pieces of tissue from various parts of this lung were taken for microscopic sections. Several capillary pipets were filled with the purulent fluid for bacteriologic examination. The right lung in the upper lobe was practically normal. The lower lobe showed pneumonic spots. Cultures from the purulent material, saved in the pipets, revealed the saccharomyces, mixed with *Staphylococcus albus*. Smears also showed these organisms. Microscopic examination of sections from the lung-tissue revealed a good deal of new and old fibrous tissue with areas of infiltration, which consisted principally of polynuclear leukocytes. Other sections showed small areas of distinguishable lung-tissue with the air-spaces containing broken-down white and red blood-cells. In these areas there was great congestion of the blood-vessels. In many sections of the lung-tissue, minute abscesses could be recognized.

The fixatives used were alcohol and Zenker's fluid. Hematoxylin and eosin, eosin and methylene blue, and acid fuchsin were the stains used at first. After searching many sections in vain for the organisms in the tissue which I had found in the pus, I finally tried the nuclear stain (Janssen's and Leblanc's modification of Moeller's method[2]) which I had previously used for differentiating the saccharomyces in smears from pus and sputum. With this, I was able to detect a few of the organisms among the broken-down leukocytes in the tiny abscesses.

CASE 2.—Miss M. W., aged 16, referred by Dr. Swindt, has always had frequent attacks of "cold" with persistent cough. She has grown very rapidly, at 15 weighing 140 pounds and measuring 5 feet 11 inches in height. She has always been greatly troubled with acne. The family history is very good. Nov. 2, 1912, the patient had an attack of rhinitis and pharyngitis. November 3, a pleurisy developed on the right side. November 4, there was a definite lobar pneumonia of the right lung, which soon involved both lungs. The temperature was 103 and the pulse 130. From November 5 to November 13 she had the usual course of a sharp pneumonia. November 14, an effusion was noted in the right pleural cavity. November 16, 1,000 c.c. of seropurulent fluid was aspirated. November 20, 1,500 c.c. of the fluid was removed and 6 ounces of a 2 per cent. dilution of liquor formaldehydi in glycerol (glycerin) was injected. November 26, this was repeated. December 2, 750 c.c. of the fluid was removed and 8 ounces of the 2 per cent. dilution of liquor formaldehydi in glycerol injected. December 18, thoracotomy was performed, 66 c.c. of the purulent fluid was removed, and a drainage-tube inserted.

Feb. 15, 1913, the wound was closed, the lung well expanded and the cough ceased. March 19, the cough reappeared, following a slight attack of cold, and for a day or two the sputum was profusely stained with blood. During the illness, frequent examinations of the sputum were made for tubercle bacilli. The results were negative. Cultures from the sputum were made early in November, and at intervals throughout the illness and always revealed a vigorous growth of the yeast organism, occasionally mixed with a slight growth of *Staphylococcus albus*. Bacteriologic examination of the pleural fluid was negative. Blood examination late in the illness showed hemoglobin, 70 per cent.; erythrocytes, 3,568.000; leukocytes, 6,000; small mononuclears, 37 per cent.; large mononuclears, 14 per cent.; polynuclear neutrophils, 44 per cent., and polynuclear eosinophils, 5 per cent. This patient was treated with sodium iodid from Nov. 20, 1912, to Feb. 15, 1913. As the acne from the iodids became very troublesome, it was necessary to use considerable Fowler's solution to control it. Aside from this no other medication was used. During the illness the patient lost over 50 pounds. April 22, 1913, five months after the initial symptoms, temperature was normal and the patient had no cough, had gained 7 pounds and had a ravenous appetite. May 27, the blood examination showed hemoglobin, 75 per cent.; erythrocytes, 5,025,000; leukocytes, 7,600; small mononuclears, 15 per cent.; large mononuclears, 12 per cent.; polynuclear neutrophils, 68 per cent., and polynuclear eosinophils, 5 per cent. She had gained 16 pounds.

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ABSTRACT OF DISCUSSION

DR. A. L. GROVER, Iowa City, Iowa: Has Dr. Breed made any attempt to classify these organisms? We have had our attention called to the question of this infection by an ordinary case of skin infection, which, so far as I can tell, is the same as has been described a good many times, but we have also had a couple of abscesses in the throat which yielded pure cultures. One seemed to resemble more the wild yeast than the cultivated one. One gave a black culture in the ordinary mediums and the other red. In both cases the organisms were in pure cultures and the cultures were sent in by physicians in different parts of the state with the idea that diphtheria was present. The history in the two cases was practically the same, that antitoxin did no good, etc. We have been doing some work along this line in connection with the botanical department and we find from what the professor of botany tells us, Professor Shimek, that we have several varieties of organisms. Some of these should be classified with saccharomycetes and some of them should be classified somewhere else. I do not remember now the exact place, but his reason was that some of them had the terminal arrangement of spores and some of them had the ordinary budding arrangement and he seemed to think we had several different forms of organisms.

DR. LORENA M. BREED, Pomona, Cal.: I should like to say that, so far as classification is concerned, I think a new classification has been proposed by the French of pathogenic yeasts as a whole, but this particular organism has been identified as a saccharomycete. It is a true yeast. I have never grown these from spores, but I think that I can produce spores by withdrawing the nutriment. I shall do this probably in later investigations. I have some reprints of the work which I did last year, which give a review of the literature and of a number of cases, not only in my own work but in the work of other persons, in which these organisms had been found in tonsil membranes as well as in sputum. In two cases in the literature and one case of my own, a diagnosis of diphtheria had been made and antitoxin had been given, with no improvement, and later inturbation was performed and a pure culture of the saccharomycete was obtained from the tonsil membrane.

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[2] The technic is given in Kloecker's Fermentation Organisms.

SYMPTOMATOLOGY OF MULTIPLE SCLEROSIS *

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Patient.—Mrs. F., aged 43, married twenty-two years, housekeeper, was seen in consultation with Dr. M. Barker. The father, aged 70, in fine health, does not drink, uses tobacco moderately and never had any severe, prolonged disease. The mother died of consumption when patient was an infant. Brothers and sisters are all healthy. Patient has five well-developed children; never had a miscarriage.

History.—The patient's birth was natural and she never had convulsions. Childhood was quite uneventful. School life was normal. Menstruation began early and still occurs regularly and painlessly, though rather profusely. The patient was well till fourteen years ago when she experienced an attack of paralysis, first on the left and then on the right side. She remembers a distinct tingling sensation traveling up the legs and arms. No disturbance of consciousness occurred with this attack of paralysis. There was some difficulty in controlling the bowels and she thinks she had some trouble retaining the urine. All this lasted about ten days, after which she seemed to recover except for the left hemiplegia which disappeared only in part. Some months after this the right side became gradually paretic again, but was never so bad as the left. The patient's mentality being somewhat below par, her laughter at times being most impulsive and immoderate and her husband not remembering well his wife's earlier condition, it was not possible to learn more of the patient's history.

Examination.—The gait was typically that of a mildly spastic paraplegia. The knee-jerks were highly exaggerated, and all of the usual symptoms of pyramidal involvement, such as the ankle-clonus, the Babinski, Gordon, Oppenheim and Chaddock signs were all easily demonstrated. The abdominal reflex was absent. Incoordination and intention tremor were most obvious in the hand and arm movements. Tactile sensations seemed to be well preserved everywhere except in and about the right hypogastrium. No analgesia could be detected and the thermic sense was only now and then slightly confused. Nystagmus, particularly on extreme lateral tension to the left, was marked. Only the slightest degree of speech disturbance could be detected.

An examination of the eyes proved negative except for a slight temporal pallor of the disks. At times there was a little difficulty in swallowing and a sense of choking. The mentality was hysteroid in character, and impulsive and immoderate laughing occurred. A Wassermann blood-test proved to be negative. Diagnosis: Typical disseminated sclerosis.

It is not my purpose to describe, or even to enumerate, all the symptoms that have been credited to multiple sclerosis. Last year,[1] I attempted to define sharply the pathology of the disease in order to distinguish it from a mere disseminated encephalomyelitis and thus to account for the wide diversity of opinion among equally competent authorities as to the frequency of multiple sclerosis. It is my desire to attempt the same thing this year in connection with the symptomatology.

It is an easy matter to diagnose multiple sclerosis clinically when the Charcot triad of symptoms is present. Nosology long ago determined that when the so-called intentional tremor, nystagmus and scanning speech, with some evidence of more or less involvement of the pyramidal tracts were present the case should be acknowledged as one of insular sclerosis. Such clear-cut cases, however, as every clinician must admit, are exceedingly rare. Even cases in which one or two of these cardinal symptoms are characteristically pronounced are rare enough. Therefore those conservative diagnosticians who hold rigidly to the Charcot picture of the disease will find their list of cases small, and their view will be that multiple sclerosis is an exceedingly uncommon affection. In this view they will receive some support from the fact that occasionally these cardinal symptoms have been observed in cases which on necropsy proved to be entirely different maladies, as for example the pseudosclerosis and diffuse scleroses, malarial intoxication, cerebrospinal syphilis, and dementia paralytica.

The query here forcibly intrudes itself, What are we to do, go on making erroneous diagnoses in calling all sorts of maladies insular sclerosis because forsooth they happen to present a nystagmus with a spastic gait, a disturbed speech or a peculiar tremor; or are we to limit our diagnosis of insular sclerosis to the strict Charcot picture and call all the others that merely suggest a disseminated lesion by some other name; or admit, if in the last instance no other name than multiple sclerosis can be applied, that no positive diagnosis is possible? As it seems to me, this is the clinical problem to-day in regard to multiple sclerosis; and until some agreement is obtained in regard to these questions, all further discussion of the frequency of the disease, based on clinical statistics, is a waste of time and energy. In a word, the literature of multiple sclerosis to-day declares as plainly as language can that every diagnosis of multiple sclerosis, in the absence of the typical Charcot picture, is but a guess, and here as well as in the cases that present a modified or atypical Charcot picture the positive diagnosis can be made only at the post-mortem table.

That the foregoing criticism is not unduly harsh, let me illustrate by the following report of a case from a well-known clinician, typical of the literature of multiple sclerosis:

> The patient, a girl aged 19, after a week's sickness vomited, had pains in the abdomen and was unable to walk. She was bright and cheerful and the first diagnosis was that of hysteria. In a few days the incontinence of urine and feces awakened the suspicion of an organic basis for the symptoms. Finally the diagnosis of disseminated sclerosis was made on the following summary of symptoms (here I quote from a prominent medical journal of London):
>
> 1. Patient in bed, fairly cheerful, but disinclined to speak.
> 2. Inability to stand, although both legs are moved freely in bed.
> 3. Reflexes exaggerated, no tremor, and apparently no anesthesia.
> 4. Dilatation of the left pupil, with left ptosis, and flattening of the left side of face.
> 5. Incontinence of urine and feces.
> 6. Occasional purposeless vomiting; apparently no headache.

The diagnosis vibrated between cerebral tumor in a silent area, tuberculous meningitis and disseminated sclerosis. It finally settled on the last-named, though why I do not see. The reporter held that this diagnosis was established at necropsy, when on "minute examination of the hardened brain" there appeared "numerous areas of degeneration throughout, their shape, size and distribution being very irregular. There was no shrinking or bulging of the cord at the sites of the degenerative areas."

All of these symptoms and pathologic findings fail, in my judgment, to establish the diagnosis of multiple sclerosis. A general infective process with a disseminated lesion does not necessarily mean multiple sclerosis. No wonder some men find the malady so common while others find it so rare!

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Mettler, L. Harrison: Multiple Sclerosis, The Journal A. M. A., Nov. 2, 1912, p. 1607.

The danger of calling every case of encephalomyelitis, the lesion of which happens to be disseminated, multiple sclerosis lies in the fact that many forms of curable disease will be regarded as progressive and hopeless. Not a few of the infections of the nervous system reveal a scattered condition of the lesion, and if such a pathologic condition should happen to exhibit a clinical picture so strongly similar to that of multiple sclerosis as to lead to the latter diagnosis, the real nature and possible curability of the disease are bound to be overlooked. Even more emphatically will this be the case if we cut loose entirely from the classical symptomatology of the disease and call cases of disseminated sclerosis those which do not present the tremor, nystagmus, speech scansion or spastic condition of the limbs.

Clinically the problem narrows itself to the question as to whether the classical picture of Charcot is to be regarded as a mere syndrome, a localization picture only, or as a sign of a distinct disease entity. If the former, then it would be better to drop the term "multiple sclerosis" entirely since we have come to regard that as a progressive malady and incurable, and to emphasize in our diagnosis merely the infectious process underlying the particular case in hand and the disseminated character of its lesion.

If the latter view is to prevail, then it would be wiser to adhere strictly to the Charcot picture of multiple sclerosis and to endeavor to differentiate its symptomatology from that of a mere disseminated encephalomyelitis of infectious origin. To illustrate: It would be better to make the diagnosis dementia paralytica, though its symptoms may in some respect resemble those of multiple sclerosis, than to establish the diagnosis of the latter, as has not infrequently been done and long after, even after death, discover that the malady was syphilis of the central nervous system with, in the case in hand, a more or less disseminated lesion. In other words, there is a practical advantage, and even safety, in clinging more rigidly than has been the tendency of late to the older and more strict definition of multiple sclerosis. The farther we drift away from that anchorage the wider will the sea of confusion become and the larger will the number be of erroneous diagnoses.

To accomplish the result which I have just indicated, namely, the more accurate diagnosis of genuine multiple sclerosis, two things will be attempted, admittedly difficult as they are. First, the positive and characteristic symptomatology of typical multiple sclerosis, so far as the cases that have been verified by necropsy warrant it, will be outlined; and secondly, the symptomatology of a mere disseminated encephalomyelitis, with whatever shades of difference there may be between it and the previously indicated symptomatology of multiple sclerosis, will be described.

Of course no one symptom will establish the diagnosis of any disease. Two or more, if one includes a cardinal symptom, may. The positiveness of the diagnosis increases with the number of cardinal symptoms included in the general picture. In multiple sclerosis, of the Charcot type, perhaps the two most distinctive symptoms are optic atrophy and more or less spastic paraplegia with its usual accompaniments in the way of heightened knee-jerks, Babinski phenomena, clonus, etc. Next in importance, and of course when added to these confirming the diagnosis almost absolutely, is the tremor, whether it be manifested as an intention tremor in the hands, a scanning in the speech or a nystagmoid movement in the eyeballs.

All of these symptoms are so well known that I shall not presume to waste time describing them. I desire in naming them in this order merely to point out that after leaving this group of manifestations we have absolutely nothing whereon to base a positive diagnosis of multiple sclerosis or any form of the disease. With one or more of these distinctive manifestations are often seen a whole host of other symptoms, psychologic and physiologic, which may suggest the diagnosis of multiple sclerosis but which in a goodly number of cases will be found to belong to some other malady with a disseminated lesion. It is just at this point that the erroneous diagnosis of multiple sclerosis is so often made, as shown by post-mortem examination. It is a risky business to diagnose multiple sclerosis on these non-cardinal symptoms when one has in the picture only one of the cardinal signs. It is nothing but a gratuitous guess and no diagnosis at all to call the case one of multiple sclerosis when the signs present include all of the non-cardinal signs but not one of the typical manifestations. Nevertheless, a survey of the literature of multiple sclerosis shows that just that sort of diagnoses are being made every day. The uncertainty and inaccuracy of these diagnoses obviously render such literature quite worthless for scientific purposes. Among the non-cardinal symptoms, by way of illustration, I may enumerate the slight mental changes, the fugitive pains, slight paresthesias and other variable sensory disturbances, the apoplectic and epileptiform seizures, the bladder and bowel irregularities, the pupillary inequalities and the bulbar manifestations. All of these symptoms appear more frequently in other maladies than in multiple sclerosis. In the latter they are incidental rather than diagnostic.

Peterson names six cardinal symptoms of multiple sclerosis: muscular weakness sometimes with cranial palsies, intention tremor, exaggeration of the knee-jerks and wrist-jerks with possibly jaw-jerk and ankle-clonus, nystagmus, speech disorder and various signs of nervous disturbance such as vertigo, headache and epileptiform and apoplectiform seizures with mental dulness. With the exception of the last-named group, this list corresponds with the cardinal symptoms which I have already enumerated. The last group, or various signs of nervous disturbance, is not distinctive of any special nervous malady but occurs more or less in all. Therefore I cannot see how they are cardinal in multiple sclerosis or help us *per se* in diagnosing this disease. In fact the same is true of the muscular weakness, the general spastic paraplegic signs and the nystagmus. All of these occur frequently in other troubles. If anything is characteristic about them when they appear in disseminated sclerosis, it is the fact that they never go on to completion. The muscular weakness never becomes actual paralysis. The nystagmus is never so typical as in labyrinthine disease. The exaggeration of the reflexes is never of the highest degree, as seen in lateral sclerosis of the cord. It is this incompleteness of the manifestations that is the cardinal feature of the disease rather than the manifestations themselves. This leaves, therefore, as the characteristic symptoms of disseminated sclerosis, only the peculiar optic atrophy, the intention tremor, the speech disorder and the incompleteness of the spastic paraplegia. To these some authorities have added the loss of the abdominal reflex, though the uniformity of this has not been such, in my judgment, as to dignify it with the adjective cardinal.

It is on the cardinal symptoms that multiple sclerosis assumes a definite nosologic status. Without one or more of the cardinal symptoms, multiple sclerosis as such cannot be recognized clinically. A curious problem obtrudes itself at this point. How are we to explain such a uniformity of symptomatology with such a wide-spread and haphazard lesion as multiple sclerosis presents? Why, with such a lesion, are the motor manifestations so frequent, so uniform and so distinctive, while the sensory are so indefinite and insignificant? Why are the vision and the optic nerve so often affected while the smell, taste and hearing are so rarely involved? How does it happen that such a scattered and haphazard lesion produces such pronounced external phenomena and yet such relatively slight visceral disturbance? And finally, why are some of the symptoms so permanent while others, though almost cardinal, are so transitory? Can it be that pathologically multiple sclerosis is one thing, namely, a wide-spread lesion, but clinically is quite another thing, a mere localization syndrome representing a part of the lesion?

In some respects it looks as if our classical conception of multiple sclerosis were limited to the disturbance of the apparatus of equilibrium and coordination. This is suggested by the cerebellospastic gait, the nystagmus, the speech scansion and the intention tremor. Cases of disseminated myelitis, involving the cord, medulla, pons and brain are not entirely unlike multiple sclerosis in their symptomatology, but there are usually other symptoms that help one to differentiate the former from the latter. There is a slightly different etiology between the two diseases as, for instance, the presence of a more or less neuropathic heredity in the sclerosis. On careful and prolonged observation the age at which multiple sclerosis is prone to appear, the sharper and more fixed character of its essential symptomatology, its general course and whole complexion are somewhat different from that of disseminated myelitis. The differentiation is difficult—extremely difficult—but it is not impossible. In the broadest view disseminated myelitis has many features about it that do not appear in multiple sclerosis. When, however, the myelitic lesions happen to entrench on and involve the functions of the general apparatus of equilibration, then its features may assume the characteristics of those of multiple sclerosis.

Disseminated myelitis is characterized by extensive paralyses with atrophy and disturbances of sensation, even more so than is ordinary transverse myelitis. In both they are decidedly more marked than they are in disseminated sclerosis. In the case of disseminated myelitis reported by Taylor and quoted by Starr, there were pains, incontinence of urine, marked weakness and numbness, and finally paralysis of the legs. There were high temperature, dyspnea, complete paraplegia, cystitis, retention of urine and tympanitic and resistive abdomen.

The point is that if we add the symptomatology of a disseminated encephalitis to the symptomatology of disseminated myelitis, even though, as Starr says, "disseminated encephalitis of infectious origin is the starting-point of many cases of so-called multiple sclerosis," we never find exactly the characteristic picture that we do in this so-called multiple sclerosis. There must be some element that marks the two sets of lesions one from the other. In the etiology there are the more marked hereditary and neuropathic preliminaries to the outbreak of multiple sclerosis; and in the symptomatology is that trait that clearly suggests involvement of the cerebellum or at least the cerebellar general apparatus, and all its connections, that preside over the function of equilibrium and coordination; also the age (early) of multiple sclerosis and the relative absence of syphilis.

Until there is a stronger basis for the view that disseminated encephalomyelitis is the same as disseminated sclerosis, we are justified in holding that the latter disease is a most rare affection, and in discarding from our statistics those reported cases that are called atypical and are yet unverified by a careful and rigid postmortem examination.

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ABSTRACT OF DISCUSSION

Dr. C. D. Camp, Ann Arbor, Mich.: I am surprised that Dr. Mettler did not mention the examination of the spinal fluid. I believe that this examination is important for differentiating multiple sclerosis from some of the conditions which are frequently mistaken for it. I think that Dr. Mettler referred to two cases reported by Dr. William G. Spiller and myself, in which the diagnosis was multiple sclerosis; in fact, the cases had been demonstrated to students as being typical of multiple sclerosis in every respect, but at necropsy they were found to be cases of syphilitic meningomyelitis. The title of this paper was "The Clinical Resemblance of Cerebrospinal Syphilis to Disseminated Sclerosis" (*American Journal of the Medical Sciences*, June, 1907). Such an error would not have occurred at the present day, I am sure, because the examination of the spinal fluid would have shown the correct diagnosis.

Dr. Julius Grinker, Chicago: It is true, as Dr. Mettler has stated, that we cannot always clinically differentiate encephalomyelitis from multiple sclerosis. It appears to me, however, that the only way in which we are at present able to diagnose multiple sclerosis is by excluding every other possible condition capable of producing the symptom-complex. When we discover a condition, the result of multiple foci, which is not syphilitic and not due to vascular disease, we have to think of multiple sclerosis regardless of whether or not we have Charcot's triad or any of the other symptoms of insular sclerosis. Nonne, in his book on syphilis of the nervous system, says that he is now convinced that he was in error when he believed that multiple sclerosis may give a positive Wassermann reaction. The only other condition that might occasionally give rise to difficulties in differentiation is brain tumor. Not long ago a patient was sent to me who presented symptoms of brain tumor. The patient had Jacksonian fits but no optic neuritis and Babinski sign on one side with only exaggerated reflexes on the other. In the absence of other symptoms, I assumed that the patient had a cortical tumor, something in the nature of a cyst. An operation was performed, but no tumor was found. Instead a large patch of multiple sclerotic tissue was discovered. Several foci together had given rise to the symptoms of a brain tumor. The patient died and multiple sclerotic foci were found in various other parts of the central nervous system. Such errors we seem to have no means of preventing. Otherwise I believe Dr. Mettler's point of view is not tenable, for, if I understand him correctly, he states in substance that because it is often impossible clinically, from the symptoms alone, to diagnose multiple sclerosis we should not diagnose it at all. I believe the disease to be more common than he states, and if we follow the rule of diagnosis by exclusion—by which I mean the seeking out of every possible condition and excluding it definitely, not only clinically, but also by means of all the new laboratory tests—we shall be able, in most cases, to diagnose multiple sclerosis.

Dr. D. S. Booth, St. Louis: It is only a few months since I had occasion to look up the literature on this subject, on account of a clinical case which came under my care, the result of which was the discovery that atypical cases much resemble several other diseases. The patient was a girl about 15 years old who had probably had symptoms of one kind or another all her life, so that the case brought out very prominently the possibility of Friedreich's ataxia. I found in the literature that this condition at times resembles atypical multiple sclerosis. With great difficulty I arrived at a conclusion and, even when I finally decided on a diagnosis of multiple sclerosis, I stated to the medical class before which I presented the case that there was a possibility of an error since I had found that eminent clinicians had erred in differentiating this disease from several other diseases which it may closely simulate.

DR. CHARLES W. HITCHCOCK, Detroit: If I understood Dr. Mettler correctly, he restricts the term "multiple sclerosis" to a quite typical syndrome, and yet he has pointed out adequate reasons from the pathology of the disease why multiple sclerosis should be distinctly atypical. It does not seem to me that we should expect this disease to present typical symptoms and typical development; nor should we shrink from the diagnosis if it be difficult and somewhat uncertain, as we do not shrink from the diagnosis of syphilis of the nervous system. The varying signs of sclerosis, varying from the location and size of the pathologic lesions, would seem to indicate an atypical disease: therefore, I do not see why we should reserve the term "multiple sclerosis" for the typical syndrome if we have in mind the pathology of anything which develops atypically. It is a risky business, perhaps, for me to speak without having had any pathologic proof of some of my diagnoses, but I have had a number of cases, diagnosis of which I have been able to reach by such exclusion methods as Dr. Grinker has mentioned. These cases have been extremely atypical. I recall three in the past year, in each of which I was forced to a diagnosis of multiple sclerosis, but no one of which conformed to any cardinal type of the disease.

DR. L. HARRISON METTLER, Chicago: In reply to Dr. Camp I will confess that for the moment I did forget what everybody nowadays knows, that a cytologic and serologic examination of the spinal fluid will determine the presence of the syphilitic infection. There may be other infections present, however, which such an examination will not aid us in establishing. I agree, in the main, with Drs. Grinker and Hitchcock that multiple sclerosis can be diagnosed by exclusion; yet a diagnosis by exclusion is always largely a makeshift, and, although we are sometimes forced to do this, it is always a most desirable thing to avoid making a diagnosis in this way. Too often multiple sclerosis, like hysteria and neurasthenia, is made a sort of waste-basket into which is thrown everything which by exclusion cannot be diagnosed as some other malady. The literature is full of these uncertain diagnoses of multiple sclerosis, and this is the reason that I have presented this paper on the symptomatology of the disease. These diagnoses by exclusion, of which the literature is so full, are in most cases no diagnoses at all, or at least are so unreliable as to render the reported cases practically worthless in forming statistics as to the frequency of the disease. A frank confession that no diagnosis is possible is usually safer and more scientific than the average diagnosis by exclusion.

Reticence of Physicians Regarding Fee-Division.—"It is evident," observes the *Journal of the Indiana State Medical Association*, "that a large proportion of the general physicians and no small number of surgeons prefer not to discuss the fee-splitting proposition. The reason is obvious. No man who is possessed of good moral fiber will defend fee-splitting as ordinarily practiced, and the man who gives or accepts a commission, which almost invariably is a secret transaction and therefore a species of graft, avoids discussion of the subject. If unwillingly he is forced to express an opinion he eases his conscience by trumping up an argument, based on false premises, concerning his desire to be a party to a 'square deal.' . . . Fee-dividing among medical men always has been and always will be a commercial proposition which has no place among ethical and honorable physicians. It started through covetousness on the part of certain unsuccessful surgeons who desired more business and incidentally more income, and was accepted by certain general physicians, not as their due but as 'easy money.'"

THE REMOTE EFFECTS OF LESIONS OF THE PROSTATE AND DEEP URETHRA *

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To the genito-urinary surgeons we are indebted for the great advance in our knowledge of the nature, frequency and importance of lesions of the prostate and deep urethra. Much of this is important only as regards the local disease, and with this we are not here concerned; but in some cases there are many secondary results important to recognize from the point of view of general medicine. One of the lessons usually driven home more by our own mistakes than by the instruction of others is the recognition of the frequency with which disturbance—*organic* or *functional*—in any system or organ is due to derangement elsewhere. The locality of symptoms is not of necessity the seat of disease. The importance of recognizing that gastric disturbance may be caused by chronic disease of the appendix or by gallstones is a good example. It is to some of the disturbances secondary to disease of the prostate and deep urethra that attention is here drawn. There is no intention of encroaching on the domain of the genito-urinary surgeon; the desire is to emphasize the importance to general medicine of the lessons of their work. We have been slow to profit from their advances.

It is perhaps an advantage to divide the disturbances into functional and organic, using the former term in its usual significance. For example, as a result of inflammation of the verumontanum there may be a general nervous disturbance, while secondary to an infection of the prostate—such as with the gonococcus—there may be arthritis. It is convenient to discuss the results of the lesions of the prostate and urethra under the various systems, as this may emphasize the variety and importance of the disturbances.

DISTURBANCES OF THE GENERAL NERVOUS SYSTEM

There is no need of pointing out the importance of a thorough study of every patient with general functional nervous disturbance in order to determine the cause, if this be possible. In these patients experience has taught the necessity of a thorough search in order to exclude the existence somewhere of organic changes before making a diagnosis of neurasthenia. Take for example the necessity of excluding hyperthyroidism. More careful study of patients with general functional disturbance—call it what you wish, neurasthenia or psychasthenia—shows the frequent coexistence of some local disease with the general disturbance. In helping these patients back to health both the local disorder and the general condition require attention, as a rule; sometimes relieving one is enough, but care of both usually gives better results.

Without discussing all the etiologic possibilities of general nervous disturbance, about which there is enough dispute, all that is desired here is to draw attention to the importance of prostatic and urethral lesions as one factor in causing general nervous disturbance in males. Every one used to dread the problem of handling patients with so-called sexual neurasthenia. On many of the profession they have a peculiarly irritating effect and there are few of us who have not had difficulty in keeping our tempers when dealing with them. What has more thorough examination of the genito-urinary system of many of these patients taught? In a considerable number the cause—or the determining cause—is found in some local disease, correction of which results in a restoration to proper function and good health. It is not suggested that all such general disturbances in males are due to such local conditions, but certainly many of them are. Careful inquiry regarding and examination of the genito-urinary system should be made in every case of nervous disturbance in the male. Systematic inquiry is often necessary as the usual history may fail to elicit any information on the subject. Why this should be is a question not always easy to answer; probably the explanation lies in the effort to put out of consciousness the thought of disturbances in the sexual sphere. This seems more likely than concealment done purposely.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

The account of a case of this kind may aid in showing the results which may follow such local lesions.

History.—The patient, aged 25, a clerk, complained of marked cardiac disturbance and severe gastric trouble. He had had the ordinary diseases of childhood, but no serious illness, and there was no history of cough or shortness of breath. The appetite was good; the bowels were usually constipated and had been so for many years. There was no history of urinary trouble or venereal infection. He had used very little tobacco and had never taken alcohol.

Present Illness.—The trouble dated back over a period of five years. The patient had been worried by constant gastric distress which was most marked for about one hour after each meal. There was no pain or vomiting, but he was greatly troubled by acid eructations. With this he had suffered a great deal from disturbance of the heart-action, which nearly always accompanied the gastric disturbance. There had been marked cardiac palpitation, and at times the heart-action was so violent that he was unable to do any work and would have to lie down for an hour or two. With this his general nervous condition had been much disturbed. His attention was constantly fixed on his heart, and when the action was very forcible he felt much mental disturbance and alarm. He was ambitious and anxious to advance in business, in which he had good prospects if he could keep at work, but these symptoms made him practically useless so far as efficiency was concerned. With these disturbances there was constant apprehension and anxiety. The appearance of a visitor in his office, or any little disturbance, gave him the fear that his heart would be disturbed, and naturally his fears were often verified.

Examination.—The patient was thin, extremely nervous and restless. The pupils were large and the skin reactions were active. The action of the heart was vigorous and at times one would have said that there was a systolic shock at the apex. There was no enlargement and the sounds were clear. There was no arteriosclerosis and the blood-pressure was 115. The pulse-rate varied from 72 when the patient was at rest, to 130 during excitement or gastric disturbance. The reflexes generally were increased. The urine was clear. A test-meal showed marked hyperacidity. The lungs and abdomen showed no abnormality.

Treatment and Course.—The patient spent some weeks in the hospital and with rest and treatment of the hyperacidity showed considerable improvement. He did not seem to gain so much as one would expect, but he was discharged in considerably better condition and with a good gain in weight. He was able to take up his work. After about three months, however, he was back to his previous state and he returned for further examination a year later. In the meantime I had had some lessons in regard to the importance of lesions of the genito-urinary tract and looked into this on the subsequent visit. It was found that the patient had marked inflammation of the verumontanum; this was treated locally with the most remarkable result. He began to improve at once and within a few weeks the whole picture had changed. He had gained weight, the heart symptoms had disappeared and the digestive disturbance occurred only occasionally.

One might quote histories of this sort at considerable length, but they differ only in detail, the important fact being that the general disturbance may be determined, apparently, entirely by the local trouble, the correction of which, with such other measures as are required, results in improvement of the whole individual. This paper is not concerned with a discussion of the cause of the disturbance. In some persons any local trouble may produce an effect apparently out of proportion to the cause. In some a disturbance in the sexual sphere may have a pronounced influence on the whole individual.

In many of these patients a predominant feature is the condition of anxiety for which, on the surface, no cause is found. This is in agreement with the frequent occurrence of anxiety neuroses in disturbances in the sexual sphere. In several patients the symptoms have been referred especially to the heart—palpitation, rapidity of rate, attacks in which with precordial distress there was tachycardia, and attacks of pain simulating angina pectoris, have all been seen. As a rule, severe distress, feelings of apprehension, and marked anxiety accompanied these. A patient, seen recently, came with a diagnosis of angina and a gloomy prognosis; disease both of the prostate and deep urethra was found; local treatment has produced a remarkable effect and he is entirely free from attacks, has gained weight and is able to attend to his business as usual. Naturally general measures, as well as local, were adopted, but the definite diagnosis and a changed prognosis probably had much to do with the rapid improvement.

The recognition of the cause in such cases is essential to proper treatment, for, without this, the patients go from one physician to another, finally perhaps giving up all hope of recovery. A discussion of the relationship between cause and effect in these cases would lead us far afield. Of the close association in many cases between disturbances in the sexual life and general nervous derangement there can be no question. One may ask if it is probable that a man with a perfectly normal nervous system to begin with can be upset nervously by such a local trouble. The definition of what is normal may cause difficulty, but a person normal to all ordinary appearances can be so upset. The results following proper treatment also support the view as to the importance of the local lesion, and when one sees rapid restoration to good health after correction of the local trouble it is difficult not to feel that this, at any rate, played a large part. In some of the cases with a tendency to general nervous disturbance and some local trouble it seems as if the latter condition is enough to disturb the balance. Correct it and the whole individual may be restored to health. Whether or not those who are thus upset deserve the description of normal may be a question, but it is one which does not concern us here.

REFERRED PAINS

In the whole study of pain we have constantly to be on our guard not to be misled in diagnosis by the seat of the pain complained of by the patient. This applies particularly to pain referred to the legs because there are so many possible causes for it, and it is too often and too easily dismissed with a diagnosis of sciatica or "rheumatism." It is important to recognize that with disease of the prostate or deep urethra there may be referred pains in many localities. The great variety of these is well brought out by Young, Geraghty and Stevens[1] in a discussion of chronic prostatitis. A large proportion of their patients had pain in the lower back which is easily called "lumbago"; in others it was referred to the region of the kidney and, particularly important, in some cases it simulated the pain of renal colic so closely that a diagnosis of renal calculus had been made and the patients referred to Dr. Young for operation. Three patients had been operated on for a supposed renal calculus. A number of patients had pains referred to the groin, perineum, rectum and testicles. In some it was referred to the legs, in some to the thigh, in others to the knee; in several it had been regarded as sciatica. In others there were disagreeable sensations referred to the rectum, perineum and genital organs.

There are many regions to which these pains may be referred, but of special medical importance are those of the abdomen, the back, the kidney, the perineal and anal regions, and down the legs. Pain referred to the perineum or genitalia suggests some local trouble. It is with those referred elsewhere that error may arise. There is no regularity in their distribution; they may choose any location. Complaint is sometimes made of pain over the great trochanter on one or both sides, and this may have continued for a long time. In some cases the pain is referred to the back or to the sacro-iliac joint, and a hasty judgment may decide on disease of the vertebrae or sacro-iliac joint as the cause. The pain is often referred to the thighs, sometimes on the inner side, sometimes on the outer part and sometimes along the course of the sciatic nerve. A detailed discussion of these referred pains is not possible here. In the abdomen, renal colic or intestinal colic may be simulated. One patient complained of very severe attacks of abdominal pain which came on irregularly, were very severe and prevented his working for some hours. Dr. Randall saw him with me and made an examination of the deep urethra. The patient did not know that there might be any association between the condition in the urethra and the attacks of pain. When the verumontanum was touched the patient cried out and said that an attack of colic was coming on. There was no doubt of the severity of the attack. He writhed with pain, his face became pale, he broke into a profuse sweat, the pulse could hardly be felt at the wrist, and he almost went into collapse. This agreed with the description of the attacks which he had given before and which I had thought he was exaggerating. With this there was hardly any pain felt in the urethra or bladder.

One referred disturbance of sensation—for it is hardly a pain—is of especial importance in lesions of the verumontanum, namely, pruritus ani. It is surprising how frequently patients make complaint of this, and, if the usual causes are not found, the possibility of disturbance in the deep urethra should be considered. Another disturbance of sensation may be referred to the rectum. There is a feeling of discomfort at a point a short distance above the sphincter. Sometimes the patient has the sensation of feces being in the rectum when it was empty. There may be no complaint by the patient of any pain in the diseased area or of symptoms referred to it.

CHRONIC ARTHRITIS

One of the lessons slowly being learned is that chronic arthritis, excepting gout, is in the majority of cases due to some infectious process, and in our search for the focus of infection the prostate must not be forgotten. In some cases this is a gonococcus infection with a resulting gonorrheal arthritis, in which connection it must be remembered that a negative examination of the urethra alone is not enough to exclude a gonococcus infection, and the prostate should also be examined. Apart from this particular organism we must recognize that the ordinary prostatitis may be the focus responsible for an arthritis, and the recognition of this may enable us to materially benefit the joint-disease. Of somewhat similar nature may be the chronic nephritis found in some cases in which a cause is difficult to find. This perhaps is due to a slow chronic infection in some cases, and the prostate may be the source of the organisms or toxins.

I have an impression, and one should always be very cautious in basing any inferences on impressions, that arthritis of the spine—spondylitis—occurs in a relatively large number of cases secondary to prostatitis. In several cases a gonorrheal arthritis of the spine seemed undoubtedly due to a chronic prostatic infection. The combination of the two conditions—spondylitis and prostatitis—may lead to error, as the referred pains due to each condition may be much alike. If one recognizes the spondylitis it is easy to consider that it may be responsible for the symptoms, rest content with this, and so miss the cause behind the spondylitis.

The proof of the association of arthritis and prostatitis is not always easy of demonstration. If the prostate is the only possible source of infection, this is a suggestive point. In some cases the proof is strongly supported by treatment of the prostatic condition resulting in improvement of the arthritis.

RENAL CONDITIONS

The effect of prostatic disease on the function of the kidneys may be marked. This is seen strikingly in cases in which there is marked obstruction from an enlarged prostate. There may be albumin and casts in the urine due not so much to actual renal disease as to irritation and perhaps back pressure. One important bearing of this is on the decision as to the wisdom of operation for the prostatic hypertrophy. The kidney condition may be regarded as of much more serious importance than it really is and operation be avoided when it is particularly required to improve the renal function. In this connection the functional test by phenolsulphonephthalein is most valuable in giving us correct information as to the renal condition. In some cases the problem is largely a mechanical one, but there is no doubt of its being more than this in other cases. The marked improvement in renal function after operation in certain cases in which there was little or no mechanical obstruction is proof of this.

CIRCULATORY SYSTEM

The influence of disease of the prostate on the myocardium and through it on the circulation is one which interests both the physician and the surgeon, especially in making a decision as to the safety of operation. There are a number of factors which have to be taken into account, such as an infection of the prostate and possibly of the bladder, sometimes pyelitis, and probably renal disturbance of some degree. Many of the patients are advanced in years and so have a certain amount of arteriosclerosis and myocardial change. This question has interested me greatly in recent years as I have seen many of Dr. Hugh Young's patients in consultation to discuss the question as to whether or not it was safe to operate. In many of these cases the question arose on account of the circulatory condition. A striking feature in such cases has been the frequency of signs of myocardial disease, an increased heart-rate, irregularity, and not infrequently dilatation. Hypertrophy is present in a considerable number of these patients as a matter of course. Many of them are advanced in years, have arteriosclerosis, suffer from chronic bronchitis, and altogether cannot be regarded as good risks. In such patients every effort must be made by careful preparation to lessen the risks of anesthesia and operation. What has impressed me particularly has been the striking change in the cardiac condition in many of them very soon after operation. This was not the result of treatment after operation directed to the cardiac condition. The operation itself might be expected to prove a heavy strain on these senile hearts, but as a rule it was quite the contrary. In some cases improved renal function undoubtedly had some influence, but the rapid improvement suggested more than this. We are aware that Dr. Babcock of Chicago has drawn attention to the influence of gall-bladder disease in the production of myocardial changes, and it is possible that prostatic disease may have the same effect. At any rate, it is important to recognize its importance in affecting the heart and not to attach too much weight to cardiac disturbance in deciding as to the wisdom of operation. The removal of the prostate seemed in many cases to be followed by an immediate change for the better in the cardiac condition; but this should not lead to the taking of undue risks in advising operation.

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[1] Young, Geraghty and Stevens: Johns Hopkins Hosp. Rep., 1906, xiii, 313.

Reference has been made to various disturbances of the heart which may be regarded as functional in character. The occurrence of attacks of pain, which may simulate angina pectoris, and of vasomotor phenomena should be kept in mind. It is probable that these result from general nervous derangement. One circulatory condition which is rare but apparently does occur secondary to prostatic infection is phlebitis. This may be in adjacent veins or in distant parts. This possibility should be kept in mind in obscure cases of phlebitis in males.

NERVOUS SYSTEM

The general functional disturbances secondary to these local lesions have been noted, but attention may be called to another point of association in regard to some organic diseases of the nervous system. Certain of these may cause disturbance of the function of the bladder as an early evidence of their presence. Thus precipitate urination may be an early sign of multiple sclerosis; it may also occur in some patients with an inflamed verumontanum. In locomotor ataxia disturbance of bladder control is common, and patients with this condition may consult a genito-urinary surgeon by whom, in not a few cases, the diagnosis is made from the local condition. In this group the tendency is rather to ascribe local symptoms to local conditions than to recognize the general disease. It is important to keep the possibility in mind.

CONCLUSIONS

The frequency with which lesions of the prostate and deep urethra are responsible for symptoms elsewhere suggests the necessity of more frequent routine examination of this region. Careful inquiry into the history should bring out functional derangements; examination should disclose organic disease. Disturbed conditions of the verumontanum are often suggested by the history, while the recognition of disease of the prostate is as a rule not difficult. In any event, if there is doubt, it is advisable to have a more expert opinion. This adds another detail to a systematic examination but one which gives good returns for the effort. It requires no emphasis to show that the recognition of the cause is important for proper therapy.

The question of diagnosis of the local lesions is not discussed here, the intention being to direct attention to the importance of the recognition of lesions in this region. This cannot be overestimated in the study of males with functional nervous disturbances. The tendency to conceal any disturbance in the sexual sphere must always be remembered. The symptoms of prostatic disease have been divided by Young into (*a*) the sexual, (*b*) the urinary and (*c*) the referred. If either or both of the first two are presented, attention is directed to the genito-urinary tract and the diagnosis is suggested. These features are not here discussed. It is in the third group that difficulty arises, and emphasis may be placed on the fact that nothing may be brought out in the history or urinary examination to suggest the presence of the local disease.

The question of treatment hardly comes in this place. Perhaps one warning should be given, and that is against treatment in a haphazard way or by one who has not been properly instructed. Too vigorous or too frequent treatment of the prostate may result in great harm and corresponding disappointment to both the patient and the physician. This is particularly the case in patients with general nervous disturbance, in whom treatment must be conducted with judgment and caution.

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ABSTRACT OF DISCUSSION

Dr. Hugh H. Young, Baltimore: Foreign writers have put the percentage of chronic urethritis in males as high as 80 per cent., which, if true, would show how prevalent deep-seated urethritis and its usual accompaniments, prostatitis and vesiculitis are, and the relative frequency of the remote and referred conditions which Dr. McCrae has mentioned. I think the percentage is not so high in America, but a fairly large percentage of male adults have chronic inflammation of the prostate, often not of the dangerous type, with no local symptoms, no obstruction to urination, no irritation, no sexual disturbance, and yet, in after years, the patient will suddenly begin to have arthritic conditions, or local or referred pains, with no symptoms pointing directly to the prostate, but which are entirely dependent on it. An interesting communication by Head of Edinburgh brought out an explanation of these referred pains. He showed that visceral lesions send painful stimuli to the part of the spinal cord supplying that region. and that from there they may be referred to some other part of the body which is supplied by the same segment of the spinal cord. The prostate thus communicates with a large part of the body below the diaphragm. A rather common neurologic symptom occurring with the prostatic condition is burning or irritation of the soles of the feet. A great many cases of supposed lumbago or sciatica and pains in the groin are undoubtedly simply referred pains from prostatitis. I have seen at least twenty-five cases diagnosed as renal calculus, some with the most typical symptoms, which were due solely to chronic, inflammatory infiltration in and around the prostate and seminal vesicles. The hemorrhage was caused by a greatly inflamed and congested verumontanum, which is often present in conjunction with the prostatitis. At least ten of these patients had been previously operated on for renal calculus, without finding a calculus, and most of them were ultimately cured by massage of the prostate and vesicles, with other local treatment. Agonizing pain in the back, often incapacitating the patient and even confining him to bed or necessitating the use of crutches, may be due to prostatitis. I have seen several patients come to the hospital on crutches, whose whole trouble was due to prostatitis with referred pains in the lower back, hips and thighs. A symptom almost pathognomonic of a diseased verumontanum is pain in the suprapubic region. General practitioners have for a long time recognized that pelvic inflammatory lesions in women produce a wide range of referred pains, but there has not been a realization in the past that an even greater number of referred pains come from diseases in the male pelvis.

DR. WALTER BIERRING, Des Moines, Iowa: An instance of rather unusual results following a local infective focus in the prostate recently came to my attention. A traveling salesman sustained a rather simple injury, a blow on the thigh, after which the following sequence of changes occurred: He developed a typical femoral phlebitis of the left leg, followed by a local abscess formation, which was incised and the exudate permitted to drain. Three or four weeks of general septicemia followed and then death. There was a claim for accident insurance because of the local injury. At the necropsy a deep-seated abscess of the prostate, showing diplococci, was revealed. In addition, another interesting fact which was brought out by Dr. McCrae was a marked fibrosis of the myocardium, which also could probably be attributed to this latent prostatic infection. There had been a Neisserian infection five years before.

DR. W. O. BRIDGES, Omaha, Neb.: One effect of disturbance of the prostate, which may be overlooked, has come under my observation within the last three or four years, with reference to several cases of abdominal tumor, dependent on obstruction of the prostate. The patient voided his urine apparently to his own satisfaction, but the residual urine eventually caused a tumor, which finally became distinctly palpable. I did not use the catheter, on the ground that the patient was able to pass 8 ounces of urine, in my presence, without any effect on the tumor of the abdomen. Two or three days later, a catheter was passed and the tumor entirely disappeared. When a catheter is passed into the prostate, in cases in which sufficient accumulation in the bladder has occurred to produce a good-sized tumor, it is surprising how much urine can be withdrawn without having much effect on the bladder. The reason is that for several weeks, or perhaps several months, the tumor has resulted in such back pressure of the urine in the kidneys that the urine drained down in the bladder about as fast as it was removed, up to a certain point. This is probably the reason for our failure in many of these cases. I recall one case in which the patient had a tumor for four months, and operation was recommended. He finally went to the hospital, the diagnosis of prostatic obstruction was made and the entire tumor was removed by the use of the catheter.

DR. J. M. ANDERS, Philadelphia: Dr. McCrae has called attention to certain causes of neurasthenic conditions that have been, to say the least, neglected by general practitioners in the past. He has well said that a most careful history is an important matter in the study of these cases. I have learned from experience one fact to which I wish to call attention, namely, that, in the absence of symptoms referable to these organs and in the absence of the history of a gonococcus infection, it will not do for the internist to exclude diseases of the prostate and deep urethra as a cause of neurasthenic states. The specialist knows that either arthritis or prostatitis may be caused by other organisms than the gonococcus, for example, *Streptococcus pyogenes*, *Staphylococcus pyogenes*, *aureus*, *albus* and *Bacillus coli communis* and others. The absence of a history of specific or gonococcus infection of the urethra is not proof positive that lesions do not exist which may cause, as I know from experience, reflex symptoms, particularly referred pains in the back.

Plague Universally Endemic.—The disease [plague] is endemic on every continent in the world and in practically all countries, excepting, possibly, those of continental Europe. In our own country any laxity of sanitary surveillance of the endemic centers on the Pacific coast would result in the broadcast spread of the disease. The same will apply to all endemic centers. It is a question of eternal vigilance.—R. H. Creel, *Pub. Health Rep.*

SOME NERVOUS SYMPTOMS OF PERNICIOUS ANEMIA *

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About seventeen years ago my attention was especially attracted to the distinctiveness of the nervous symptoms occurring in pernicious anemia, and at that time I reported a case before the American Neurological Association in which the pathologic findings were those of a subacute combined degeneration of the spinal cord. At this time I called attention to the fact that the sclerosis was apparently vascular, not systemic in origin. Stengel has stated that this type of anemic patients give the highest blood-count. Bramwell in 1910 reported a case in which the nervous symptoms were characteristically those of disseminated sclerosis and in which the cord symptoms developed three years before the anemia became marked, and he emphasizes the fact that the nervous phenomena may occur a long time before the anemia or cachexia which precedes or accompanies the degenerative changes in the spinal cord. This also has been my observation. Not only is the blood-picture not typical of that in pernicious anemia, but the nervous symptoms usually precede for months or sometimes even years the blood-findings characteristic of this disease. In Bramwell's case before mentioned the anemia was so slight that no blood examination was made and it attracted attention and became a feature of the case only a few weeks before death.

Some years ago I saw a patient in whom the clinical syndrome was that of a chronic myelitis; the nervous manifestations overshadowed by more than two years the typical blood-findings of pernicious anemia. Not infrequently the symptoms resemble those of a transverse myelitis or of a multiple peripheral neuritis.

According to Strümpell the nervous symptoms are similar to those of tabes; other writers compare them to ataxic paraplegia. It is an interesting fact that the nervous syndrome may be entirely wanting and yet there may be involvement of the spinal cord. Spiller has shown that the degenerative process may extend into the brain axis.

These symptoms may be purely subjective, such as numbness in the arms and legs. One of my patients complained that the bones were going through the flesh. According to Putnam paresthesias are strikingly noticeable. Knee-jerks may be normal, absent or exaggerated; ankle-clonus and the Babinski reflex may or may not be present; paraplegia may be partial so that the patient may move the legs freely in bed, or it may be complete. Associated usually with this is a loss of control over the bladder and rectum. Lightning pains and objective sensory disturbances are common. Wilson recently reported a case in which gastric crises were present. Dissociation, as in syringomyelia, has been observed. Dimness of vision is quite frequent and occurs early. Optic neuritis, optic atrophy, and hemorrhages associated with retinitis are occasionally seen. Mentality is as a rule unimpaired, although psychotic symptoms have been reported. Camp and others have described cases in which the mental symptoms and signs of paresis were clearly marked.

Dr. Addison, of suprarenal capsule fame, first described (and his description remains classical until to-day) a fatal and apparently causeless anemia which he designated idiopathic anemia, and it was while exploring pathologically the bodies of these patients to find the cause of this disease that he discovered the remarkable lesion which is basic in what we now know as Addison's disease. Dr. Pepper taught that this affection is fundamentally a disease of the bone-marrow, the most important red-blood-making structure. On the other hand, Dr. William Hunter contended that pernicious anemia was caused by an excessive destruction of the red blood-cells in the portal circulation, demanding of the bone-marrow an extreme effort, and in these cases, White tells us, the marrow is red like fetal marrow and is evidently in a state of great activity and "that in its hurry to cure the disease it is constantly pouring into the blood immature forms of red cells such as megaloblasts and normoblasts, poikilocytes and red cells staining badly, which give blood films so characteristic of pernicious anemia."

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The ultimate cause of pernicious anemia is most likely a toxin absorbed from the gastro-intestinal tract, but as to the exact nature of this toxin we are entirely ignorant. This supposition affords us a plausible reason why in certain cases the nervous symptoms precede by so long a period those of the blood-picture, the time incidence in either case depending on the point of initial attack by the toxin. Marie's suggestion as to the anatomic arrangement of the pial blood-vessels would account for the occurrence of the combined lesion. Its relatively poor blood-supply in health would probably make the dorsolateral cord particularly susceptible to degeneration in abnormal conditions (Taylor). Certainly such an environment is favorable, and as to the selective affinity of toxins, who can say?

The following cases are a fair illustration of the nervous syndrome occurring in pernicious anemia:

Case 1.—Miss K., aged 55, no nervous heredity, never robust but always well until fourteen years ago, when she had a nervous breakdown, was ill for two months. Two years ago she began to suffer from insomnia and loss of appetite; she complained at this time of a stuffed, bloated feeling in the stomach. She was very nervous and despondent and has continued so until the present time. Vertigo has been constant, worse in the morning; there has been continuous headache, the pain extending from the nape of the neck over the head to the forehead. Her eyes feel "as if they were pushed down." She complains of pain in both heels and small of the back, from which it extends to the front of the body and down the anterior aspect to both extremities. There is a burning sensation in the heels as though they were on fire and there is a constant shooting pain in the soles of both feet. Shortly after the legs and feet became affected she began to suffer pain in the hands; it extended up the arms, most severe between the hands and the elbows; it is intense and is of a burning, stinging character. Everything she touches hurts "as if she were touching hot glass." This pain is continuous, never lets up and seems to be steadily increasing. A year and a half ago she first noticed that her walking was unsteady and that when she attempted to wash her face she would almost fall over; she says that her legs feel as if they were wooden and did not belong to her. There is a marked weakness in both lower extremities and she finds it very difficult to arise from her chair without the aid of her hands. There is Rombergism; knee-jerks and Achilles jerks lost; the plantar reflexes plus; superficial reflexes all present with the exception of the gluteal; tactile sense impaired from below the umbilicus. Cold normal, heat exaggerated in the same area; urine normal. Hemoglobin 62 per cent, red blood-cells 4,061,000, white blood-cells, 4,112; color index .8; blood-picture normal, blood-pressure 130 mm. Hg.

Case 2.—Mrs. O., aged 61; father died of pneumonia in his sixty-ninth year, mother of senility in her eighty-sixth year; three brothers living and well, two dead, one of diphtheria, one of acute Bright's disease; three sisters living and well, two dead, one of tuberculosis, one of apoplexy. The patient has had ten children of whom seven are living and well; one died of diphtheria, two died at birth. Climacteric at 48. For the past twenty years she has had a winter diarrhea. She began about five years ago to stumble in the dark. Although the weight is normal, yet there has been a progressive loss of strength; three years ago she noticed that she would tire very easily when walking up stairs; this effort was accompanied by rapid heart action. She complained of "rocking" feeling in the head. She has had three sinking spells lasting about a minute each time, but did not lose consciousness. The legs have grown steadily weaker and there is marked ataxia. She has been confined to bed since November, 1912. Lately she has had difficulty in starting the urine. There is a girdle sensation around the abdomen and a numb feeling in the legs to the hips and in the hands to the elbows. There is partial loss of tactile sense from the umbilicus downward. The loss of sensation in the upper extremities is more marked in the palms of the hands. Patient has a yellow color but says she has had this all of her life. Her eyesight has been poor for the past fifteen years.

When examined January, 1913, she was confined to her bed, would lose her legs in bed; there was marked Rombergism, knee-jerks normal, urine normal, hemoglobin 81 per cent., red blood-cells 3,584,000, white blood-cells 3,571, color index 1.1, no nucleated reds but poikilocytosis was marked.

Case 3.—Mr. A., aged 53; father died of myocarditis in his fifty-seventh year, mother of apoplexy in her sixty-eighth year; a brother killed himself; two sisters are living and well. The patient had diphtheria in his twenty-second year. He denies venereal disease. In 1900 he first noticed that fluid began to gather in the knees and wrists, also in the ankles (hydrops articuli); the accompanying pain was intense. In 1907 he developed arthritis deformans. His face is a lemon color; this has been increasing during the past eight months. Paresthesia in the hands and lower extremities. Impaired sensation (tactile) in both arms from elbows to finger-tips, and in the legs from the lower level of the buttocks down. Aside from Rombergism the neurologic examination was negative. The hemoglobin was 36 per cent., red blood-cells 2,120,000, white blood-cells 5,130, color index 0.9; poikilocytosis, blood-pressure 180 mm. Hg; urine, albumin with granular and hyaline casts. This is the second case I have seen this year in which nephritis was associated with pernicious anemia.

Case 4.—R., patient of Dr. Hammes, aged 42, mother died of apoplexy in fifty-fifth year, father of senility in his seventy-sixth year; five brothers living and well; one died of chronic nephritis; one sister living, but is asthmatic. The patient had acute articular rheumatism in his fifteenth year. No history of venereal disease. Five children living and well. About three years ago he began to suffer from numbness and a burning sensation all over the body. For the past eight months he has gradually grown weaker, bedridden for three months. In the last three weeks memory has failed notably. At present there is pain associated with cramp in both legs. During the last year the patient has suffered from alternating attacks of diarrhea and constipation. He can move his legs in bed with difficulty. There is marked ataxia, Babinski reflex in both feet and an impairment of all forms of sensation below the umbilicus. Hemoglobin, 46 per cent.; red blood-cells, 2,116,000; white blood-cells, 5,718; color index. 1.1; urine normal.

Case 5.—Mrs. H., aged 71; father died of cardiac disease, mother of senility in her eightieth year; five brothers living and well; one died of diphtheria; one sister living in frail health, two sisters dead, one of apoplexy, one cause unknown. Two children living and well; two died at birth; there were two miscarriages; one child died of diphtheria. Patient always well; climacteric at 48. Suffered from chronic constipation. In May, 1912, she first noticed difficulty in using hands. A cold sensation soon developed in all four extremities, also a

tired feeling and loss of power. Patient gradually grew worse
and she complained of a distressing numb sensation in heels
and knees. There was at times tremor of right arm when try-
ing to feed herself; also aching in the joints, especially of the
wrists and in the bones of the forearm. There was a rapid
loss in strength and weight. Diarrhea without any apparent
cause occurred about every ten days. Profuse night sweats.
The pain was so severe and so constant, with marked tender-
ness over the nerve trunks, that she was supposed to be suffer-
ing from multiple neuritis and was sent to us for treatment of
that disease. Deep and superficial reflexes normal, urine nor-
mal. Hemoglobin, 62 per cent.; red blood-cells, 2,403,000;
white cells, 4,280; color index, 1.3; marked poikilocytosis;
nucleated reds were present.

Because leukopenia was present in all three cases it is well to recall Türk's statement that in pernicious anemia you must have leukopenia associated with the red blood-cell picture. While there is great reduction in both the red cells and the hemoglobin, this is proportionately much larger in the former, and hence each cell in order to compensate for their paucity has to carry an excess of hemoglobin. A higher color index therefore may be looked on as the constant of pernicious anemia and may be regarded as Nature's attempt at a cure (White).

The direct relation of the nervous syndrome to a diffuse primary non-systemic degeneration, occurring mostly in the spinal cord, has been definitely and clearly established. In my own case, reported before the American Neurological Association in 1896, these changes were most noticeable in the middorsal region; from this point they steadily decreased, ceasing at the third lumbar segment. Commonly the nerve roots, peripheral nerves and the gray matter escape; yet a number of cases have been reported in which the anterior horns were involved. The affection of the blood-vessels is usually slight. This degeneration is, without doubt, due to a variety of toxic causes, namely, toxins from the gastro-intestinal tract, poisons, metallic and vegetable (ergot of rye). Without doubt also this pathologic process may occur in persons with a deficient initial life-impulse in whom degenerative tendencies manifest themselves early. Anemia may precede, associate itself with, or follow diffuse degeneration of the spinal cord, but in many instances, notably the cases of Russell, Batten and Collier, there was nothing in the blood to suggest pernicious anemia. In pernicious anemia the anemia, like the cord changes, is a direct result of the toxin, be it a germ toxin or a chemical one, we do not know which. Probably in each instance the personal equation determines whether the pathologic process be a pernicious anemia with or without cord lesion, or a diffuse degeneration of the spinal cord simply. The ultimate facts are that there is a nervous syndrome frequently found in pernicious anemia dependent on a diffuse, non-systemic, primary degeneration of the spinal cord, that this syndrome may antedate by months or even years the characteristic blood-picture, and that both the anemia and spinal cord changes are the resultants of toxic influence. Contrasted with this must be the nervous phenomena incident to subacute, combined degeneration of the spinal cord with which pernicious anemia is not associated.

Byrom Bramwell, in 1874, was struck with the fatty condition of the heart in pernicious anemia, and as he had observed that arsenic was beneficial in cases of fatty heart, he commenced its use in this disease. In 1910 he began the use of salvarsan and has since treated eleven cases with it. Of these four have been apparently cured (remission?), two were strikingly benefited, one case improved at first with ultimate relapse and death, and another patient became somewhat better, but died of pneumonia while under treatment; yet another patient is slightly improved, but still under his care at the time of writing (May 24, 1913), while two patients received no benefit whatever. He regards the intramuscular injection of salvarsan as the best method of administration because it will produce a sustained and continued effect, and he thinks its use in this form much superior to the ordinary arsenical treatment. Neosalvarsan gives much less pain and swelling, and is therefore to be preferred. He uses 0.3 gm. Life being so precarious in grave cases he considers it safer to give the smaller dose. My personal experience in the use of this drug in this disease has been somewhat limited. I prefer the intravenous method and the larger dose, 0.6 gm. In Case 2 the patient was greatly benefited under its use; her nervous symptoms were rapidly disappearing when she left the hospital and she was getting so that she could walk fairly well. Current medical literature gives very conflicting reports regarding the benefit derived from this treatment; much further observation will be necessary before we can properly estimate its true value.

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ABSTRACT OF DISCUSSION

Dr. George A. Moleen, Denver: There has been failure on the part of most neurologists, I think, to recognize the importance of blood-changes and their influence on nerve structure. The underlying systemic condition which lowers the resistance of the nerve elements to nervous influences has not been given sufficient attention. We shall, I believe, realize that this is particularly true when we recognize the increased irritability of the nervous reflex centers and the irritability of nerve structures generally in high altitudes, where, if physical factors are considered, we must remember that the amount of hemoglobin, consequently the number of red blood-cells sent to the tissues generally, must necessarily be greater in view of the lessened atmospheric pressure. That nerve structures are vulnerable to influences under anemic states, when otherwise they would not be, has, I think, been generally accepted. For example, it is not uncommon to find that a fatigue neurosis develops more readily in an anemic person than in those persons who might be considered as presenting the antipode of the anemic condition; in other words, in plethoric individuals. About two years ago I saw a number of cases of acute combined degeneration of the spinal cord. These cases have been considered as due to, or peculiarly associated with, blood-changes similar to those of pernicious anemia. I believe, however, the fact that they follow on acute infectious diseases, has been considered of more importance in producing the anemia than that the anemia is the cause of the disease itself. Most of those cases have followed influenzal infections.

Dr. Riggs has emphasized the importance which he attaches to the anemic states as bringing about nervous diseases, and this is a factor which should be given most careful attention. It is an underlying systemic factor in rendering the nervous system of these persons more susceptible to organic change under influences commonly recognized, than that of an individual supplied with a normal hemoglobin content and a full corpuscular count.

Dr. Howell T. Pershing, Denver: I should like to speak of a striking case that comes in one of the groups Dr. Riggs has been discussing. The patient was an able attorney. When about 60 years of age he began to show his age with great rapidity. He became quite pale, his hair whitened rapidly, he lost a good deal of weight and the expression of his face was considerably changed. While working hard at a summer session in Washington, he noticed especially fatigue in the legs. He could walk all right for a short distance, then rapidly became fatigued, but after a rest could get along better. A few months later I had the opportunity of examining him with his family physician. At that time he was resting mentally and having some recreation; he wanted to play golf, but could not walk enough to do that with satisfaction. I could find no sign of organic disease, although he was examined with great care. In the winter he went to Honolulu and there he probably exercised too much. He had a stormy voyage coming back, and on arriving at San Francisco showed some signs of myelitis, having lost control of his legs and showing some sensory loss. He was at that time seen by Dr. Moffett of San Francisco, and later when I saw him he had definite signs of transverse myelitis. There was motor loss and distinct sensory loss, with some disturbance of the sphincters. He returned home and improved somewhat under rest in bed. The point that bothered both his physician and myself, however, was that while we thought this must be a case of pernicious anemia, and treated it accordingly, our examinations of the blood were, as we thought, quite inconclusive. There was only a moderate reduction in the reds, down to something over four million as I recollect, and the number of whites was about normal. The color index was slightly high, about 1.1 There were no normoblasts and there was no poikilocytosis. As time went on there was a continued slow reduction in the red cells, but not enough to account for his symptoms, so far as we could determine. Then an obstacle to further study occurred. The patient's daughter had died of pernicious anemia, and he had read much on the subject and studied his daughter's case with the utmost care. He was sensitive and begged to be relieved of the frequent tests of the blood. He had a horror of everything associated with anemia, even of the simple prick of the finger, and we had to respect his wishes. Toward the last week or two of his life the anemic appearance was striking. I think it was one of those cases spoken of by Dr. Riggs, without great changes in the blood. The changes in the cord were clinically distinct. It was the ordinary type of transverse myelitis, coming on with a sharp exacerbation at the time of the Honolulu visit, afterward showing slight changes and a gradual loss.

THE SERODIAGNOSIS OF PREGNANCY*

HENRY SCHWARZ, M.D.
ST. LOUIS

In speaking of methods for serodiagnosis of pregnancy, I refer to the biologic tests of Abderhalden only, because the method of Rosenthal, while of considerable scientific interest, appears to be of small practical value. It is applicable during advanced pregnancy only, and all conditions associated with increased destruction of the body proteins respond to the same test.

Abderhalden's methods of serodiagnosis of pregnancy, on the other hand, give reliable information just as soon as the ovum is permanently implanted; these methods are based on specific reactions and they are suited for the widest application in the study of physiologic and pathologic conditions.

To appreciate the value and the scope of these methods it is essential to have a clear understanding of the underlying principles and to be familiar with the monumental work of Abderhalden on cell metabolism and on protective ferments, which covers a period of more than ten years of intense activity.

It appears that each body-cell, including the white and the red corpuscles and the blood-disks, carries on its own metabolism; it takes up nutritive substances from the blood, digests them with the aid of various enzymes, using the end-products of the intracellular digestion for the development of energy or linking them together into complex building-stones for the development or the repair of its own body.

The protoplasm of one group of cells differs from that of other groups of cells chemically and physically; difference of function implies difference in structure. The protoplasm of renal epithelial cells differs in structure from the protoplasm of muscular fibers; glands with internal secretion, sending out substances which act on special cells in distant parts of the body, require special structure both in the cells which send out these substances and in the cells on which they act.

Such intercommunicaton of two or more sets of cells is made possible by the fact that the intervening medium, the blood, is, under normal conditions, of pretty constant composition, and that the physical and chemical conditions in the various cell-groups likewise remain fairly even.

Nutritive substances pass into the blood from two sources: namely, from the gastro-intestinal tract and from the body-cells; before entering the blood-stream they must be divested of all individual character and be reduced to the simple cleavage products which form normal constituents of the blood.

For the purpose of this paper I shall limit this review to protein metabolism.

Protein foodstuffs, no matter what their source, are conglomerations of amino-acids; these are joined together into small groups like the blocks in a Chinese puzzle; the amino group of the one acid is always joined to the carboxyl group of the other; these small groups are joined together to larger and still larger groups, until they form the large albumin-molecule.

So firmly are these amino-acids joined together, that nothing short of repeated blasting will separate the albumin molecule into its original building-stones; this blasting is accomplished by the ferments of the gastro-intestinal canal with the aid of water, which enters at the points of juncture, that is, by hydrolysis.

The work of reducing the albumin molecule to amino-acids is a gradual one; the pepsin of the stomach in the presence of hydrochloric acid breaks it up into large fragments, proteoses and peptones; the trypsin of the pancreas, activated on entering the intestines, reduces these large fragments into smaller ones, the peptides and amino-acids; the enzyme found in the cells of the intestinal mucosa, the erepsin, completes the reduction into amino-acids.

Substances which are absorbed from the intestinal canal must pass through the liver before they can get into the general circulation. Here they are once more closely inspected by the liver-cells and, if anything has passed that is in the least degree foreign to the blood, it is held back and reduced to a blood-own substance. The liver likewise prevents a *flooding* of the system with blood-own substances by holding back an excess of such substances and letting them pass on in small quantities only, or by converting them to forms which can be stored up in the body for future use.

The other source from which nutritive substances and products of metabolism enter the blood-current is from the cells of the body.

All cell protoplasm is foreign to the blood; it has been built up by the cells from the amino-acids which are blood-own and it must be reduced to its original components before it can be allowed to enter the blood.

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* Read in the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

The lymphatic system is interposed between the cells of the body and the blood-current; the leukocytes and the lymph-vessels stand guard that no blood-foreign material enter the blood through this channel; substances that are not fully reduced are held back and converted into blood-own substances before they are passed along.

By these arrangements, and with a checking system at each point of entrance, the blood remains fairly constant in composition and, under normal conditions, the plasma contains no proteolytic ferments.

Under certain conditions blood-foreign material will enter the circulation in spite of these safeguards.

Overloading the stomach with protein foods may paralyze digestion and upset the checking system of the liver; inflammation of the various organs and other pathologic conditions, such as germ invasion of the tissues, will cause the cells of the respective organs to pass such quantities of unreduced substances that the lymphatic system is unable to prevent their passage. Malignant and kindred cells, such as those of cancer, of sarcoma and of the syncytium, may pass sufficient quantities of blood-foreign substances to force them into the blood-current; or they may eat their way into the blood-vessels and thus enter the circulation. Bacterial invasion of the blood means the entrance of blood-foreign material in a double sense; living, the germs pass the products of their metabolism into the plasma, and dead, their bodies constitute blood-foreign protein material.

Finally, blood-foreign material may be introduced into the circulation by intravenous or subcutaneous injection.

The system responds to the entrance of the blood-foreign material by the mobilization of ferments, which appear in the plasma and reduce this foreign material to blood-own substances, which may be utilized by the cells of the body or which may be eliminated by the various organs of elimination.

These enzymes are specific in the sense that they are active only against the substances to which they owe their existence; Abderhalden has named them the protective ferments.

For instance, if fresh kidney extract is injected into an animal, the serum of that animal, taken four days afterward, will digest kidney-albumin and kidney-peptone; this digestive power is greatest if the kidneys used for the extract and for the albumin are from the same species; such serum is not active against any other tissue.

The presence of these proteolytic ferments is easily proved by the dialyzation method in the following manner: the tissue against which the serum is to be tested is boiled, so as to coagulate its albumin; a certain quantity of this albumin, together with a certain quantity of the serum, is placed in a dialyzing thimble; the thimble so charged is immersed in a vessel containing a certain quantity of distilled water; for control another dialyzation test is made in which the same quantity of albumin, the same quantity of serum and the same quantity of distilled water are used, but with the difference that the serum for the control has been heated so as to destroy all ferments which it may contain.

Albumins are colloid in nature and do not dialyze; as digestion progresses the albumin molecule is split into smaller and smaller fragments, which become more and more dialyzable, so that when the peptone stage is reached it is possible to demonstrate the presence of peptone in the distilled water by color reaction; the biuret reaction gives a pink color and the ninhydrin reaction gives a characteristic violet-blue color; the distilled water of the control, tested in the same way, must remain colorless.

If digestion is carried further the distilled water of the test will no longer give the biuret reaction because all peptone has been reduced to amino-acids, but it will continue to give a beautiful ninhydrin reaction.

The presence of these ferments can also be demonstrated by the optic method in which the serums are tested against peptones prepared from the respective tissues.

This method requires expensive apparatus and considerable technical training, but it contains fewer sources of error and can be applied in the study of questions for which the dialyzation method is not adapted.

My own experience with these tests is still limited to the dialyzation method, because it took considerable time to assemble the apparatus and to obtain placental peptone for the optic method, and it will take considerable more time for my associates and myself to become sufficiently familiar with the work to take it up in earnest; we expect the same large portion of trials and tribulations which we encountered in becoming acquainted with the dialyzation method.

While using the biuret reaction exclusively, I had some negative results in cases of advanced pregnancy, because digestion was carried too far; since using the ninhydrin reaction I have obtained positive results in some non-pregnant cases, because I worked with too large quantities of serum; at all times I have had conflicting results due to various sources of error such as bacterial growth, unclean glassware, leaky dialyzers and improperly prepared albumin; these errors and the time-consuming work of locating them I consider a most valuable experience.

On the other hand, I have the records of twenty-one pregnant and four puerperal cases, in which the test invariably has given the violet-blue ninhydrin reaction, while the control remained colorless; these cases cover the period from twelve days after the missing of the menses to the fourteenth day post partum; I also have the records of eighteen non-pregnant cases, including several tubal enlargements, four uterine fibroids and two males, in which the dialysates of both test and control remained colorless.

In all these cases I have personally done every part of the work with the exception of taking the blood from the patient, which has always been done by my associates, Drs. Newell and Royston, who are experts in securing hemoglobin-free serum.

In eight instances the serodiagnosis has been employed as the only means of differential diagnosis, and in every one of these eight cases its answers have been true. One of these was the case of a girl twelve days overdue on whom criminal abortion had been attempted, but who denied the charge and refused pelvic examination; two patients in whom tubal pregnancy was considered by the physicians in charge proved non-pregnant; the one had a pyosalpinx which was removed by operation, the other had a chronic parametritis; of two women between forty-five and fifty years of age, one, who had never been pregnant and who had menstruated regularly until eight weeks before the test was made, proved to be non-pregnant, and the other, whose youngest child was 18 years of age, and who likewise was four weeks overdue, proved to be pregnant; of three other patients one, with irregular bleeding without having passed the menstrual period, proved pregnant, and miscarried soon afterward; another, a young woman with irregular menstruation who had often skipped two or three months and was again eight weeks overdue, proved non-pregnant and the menses returned later; in still another in whose case there were good reasons for interrupting a possible pregnancy and who gave a positive reaction when two weeks overdue, I emptied the uterus and removed the ovum.

In all of these cases the control was carried on with inactivated serum and placenta; these tests were always made in the presence of interested physicians, and for this reason the control was extended to the examination of a case positively pregnant and to another case positively not pregnant.

The test with positively pregnant serum is desirable because we have found that one can by repeated boiling and reboiling of poorly prepared placental albumin, which has undergone autolysis, get rid of most of the albumin and obtain a placental preparation which will no longer give the ninhydrin reaction in its usual intensity.

While I am much interested in these biologic tests on account of their diagnostic value, I prize them still more highly because they open up a wonderful field for the serologic study of pregnancy, and because they may lead to a rational serotherapy of the toxemias, including eclampsia.

It has been proved that throughout pregnancy blood-foreign substances are passed from the placenta into the maternal blood-current and that the maternal system responds with the mobilization of protective ferments, which cause the intravascular digestion of this material.

Evidence is accumulating which indicates that in toxemic conditions the formation of protective ferments is deficient, and it appears rational to correct this deficiency by the subcutaneous or intravenous injection of normal pregnancy-serum.

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ABSTRACT OF DISCUSSION

Dr. Joseph B. DeLee, Chicago: This subject has the broadest application and opens up a vista of possibilities which is as extensive as it is alluring. The human serum reactions interest many departments of surgery and medicine. On the injection of albumin into the blood the blood reacts with the formation of a ferment. A certain kind of albumin develops a certain kind of ferment. The highest kind of laboratory work is required for the practical development of the fine details of the subject. The asepsis of the serums must be looked after because the action of bacteria will reduce the albumin and it will then dialyze through the tube when otherwise it would not. There is difficulty, also, in getting tubes of proper dialyzing power. In diagnosis, when the question is whether a certain tumor in the pelvis is a pregnancy or something else, it is not impossible to imagine that, if it is a fibroid, manipulation will set loose an amount of albumin in the blood-stream and we will immediately get a reaction analogous to that of pregnancy serum and again, a fine differential analysis will be necessary. Ries of Chicago recently demonstrated a uterus in which a pregnancy had not occurred for eighteen years and which still had placental villi in some of the veins showing that the villi had retained their nourishment for a long period. Playfair's case proves that placental tissue can live in the uterus for eleven months. You can see at a glance how valuable a test of this kind is. From 2 to 3 c.c. of the woman's blood-serum we can tell whether she is pregnant or not. Dr. Schwarz has spoken of the importance of determining the presence of these bodies in arterial hypertension, including eclampsia. Perhaps these serum tests will clear up the question of post-partum hemorrhage. Some of these cases are due to the disorganization of the blood—the result of changes in pregnancy. The discovery opens up an immense field for study, not alone in obstetrics, but in all branches of medicine.

Dr. Chester M. Echols, Milwaukee, Wis.: I have been working on this test and have just lately gained some confidence in the results of the reaction. We all have had the experience of stumbling through several months of uncertainty, getting positive results in our control and negative results in patients known to be pregnant. In my last twenty or twenty-five cases of women known to be pregnant the results have been positive in every one and negative in the control except in a few cases where the control patients had other diseases. One *thing gave* me confidence in the test—the character of the man who devised it—Abderhalden. After three hundred consecutive positive results he still warned the profession against accepting his work at its face value, because, he said, there might be other diseases which would give a positive reaction. There are a number of fallacies which must be weeded out before we can accept this test at its final worth, but to-day no one is prepared to say the last word, although I think that it will be an exceedingly reliable test, as tests go. We know that the Widal test is not absolutely reliable. We *know that there* are other conditions than syphilis that will give the Wassermann *reaction*, and yet these two tests are valuable. To my mind, this will be the final result of our work on the Abderhalden test.

Dr. N. Sproat Heaney, Chicago: I wish that Dr. Echols had given us his experience in percentages. I did not hear Dr. Schwarz's statistics, but I gather that he has had no failures of the test. One year ago I became interested in this test. At first I worked to see if I could demonstrate an increased peptolytic power of the blood-serum in pregnancy by titration to the amino-acids, before and after incubation of the blood-serum, with peptone solution. I found that the *peptolytic activity* varied, and that this *variation could not* be brought into correlation with the gravid or non-gravid state of the patient, but that it depended on some other set of circumstances not elicited. This year we began to try Abderhalden's dialysis method of testing. We have not made a large number of tests, about twenty-eight altogether, but every few weeks we have made all the modifications of the test, as suggested by Abderhalden. The test reacted negatively twice in the presence of normal uterine pregnancy. One healthy woman who was not pregnant gave a positive reaction. We had five diseased persons who were not *pregnant react positively*; two males with syphilis, a woman with extensive ulceration of the rectum, a woman with tuberculous peritonitis, who had had a hysterectomy the previous year, and a woman with a fibroid uterus. Several others have not had the uniform results that Abderhalden has published and the statement that all negative results depend on defective technic does not satisfactorily explain the situation of this test among laboratory methods.

Dr. Henry Schwarz, St. Louis: In the short time given for discussion we cannot hope to settle questions of the importance of this one. All I can advise Dr. Heaney to do is to publish his cases with a detail of his technic and I have no doubt that the answer will be found. Professor Abderhalden, in the discovery of these ferments, has opened a new field and the diagnosis of pregnancy is only a trifling part of this work. I am quite sure that we should be careful before we talk of these questions as matters of absolute belief. We believe, but we have to *prove our* belief. The only way to prove this question is by publishing the detail of methods. I have no doubt that others will either convert us to their views or we shall convert them to ours.

Need of Accuracy in Medical News.—Our best newspapers take pains to have their financial articles written by those familiar with the subject; they also scan the source and the authority of the informant giving news of the day. Should not the same rules prevail in publishing scientific knowledge, whether medical or other? Why should the assignment be made to a bright reporter to work up the "story" about a serum unless that "story" be edited by one who is thoroughly acquainted with serums and their action? A great deal more harm is done by awakening the expectancy of the ill in the promise of a remedy which eventually fails than in getting up a war scare.—*Bull. Am. Acad. Med.*

DURATION OF IMMUNITY FOLLOWING SMALL-POX VACCINATION *

A. W. LESCOHIER, M.D.
DETROIT

A certain degree of reticence is felt about recording observations on the subject on which so much work has been done and with which I have had a relatively short experience. The collection of the present data, however, was prompted first, by the observation made in a larger series of cases that successful revaccination after relatively short intervals is met with surprising frequency, and, second, the variance of my results with the ideas commonly held by physicians with whom I have come in contact. In dealing with patients reporting for compulsory vaccination, and who have a certain degree of antipathy to being inoculated, not infrequently objections are offered based on statements alleged to have been made by physicians by whom they have been previously vaccinated. If the patient has an unusually sore arm not only he, but sometimes his physician as well, is inclined to believe that a permanent protection has been conferred.

I was directly prompted to report my observations by an editorial appearing in *American Medicine*, in February of this year, and from which the following quotation is made: "It is almost a rule for revaccination to be unsuccessful, and there are no cases of small-pox on record in which there is a history of proper vaccination and revaccination which have undoubtedly been successful." A little further on the editor refers to certain statistics published by Dr. Kitasato of the Imperial Institute of Tokio and said: "He estimated that immunity was practically gone ten years after vaccination. These figures cannot be accepted for a moment. The error was doubtless due to mistaking an inflammation from pus organisms as an evidence of successful vaccination. The British Royal Commission states that immunity generally lasts for nine or ten years, but it is justifiable to conclude that the evidence on which this opinion was based was also defective from the inclusion of spurious cases. Proper vaccination is far more effective than this, and we revaccinate entirely too often." From these quotations it is evident that the editorial writer believes immunity from vaccination to be practically permanent in most cases.

Kitasato's results, which were the object of this criticism, were based on a series of 931 revaccinations. He obtained successful revaccinations approximately as follows:

After 1 year	14 per cent.	After 6 years	64 per cent.
After 2 years	33 per cent.	After 7 years	73 per cent.
After 3 years	47 per cent.	After 8 years	80 per cent.
After 4 years	57 per cent.	After 9 years	85 per cent.
After 5 years	51 per cent.	After 10 years	89 per cent.

Millard[1] states that the government report of the German Confederacy shows from 91 per cent. to 93 per cent. successful revaccinations after ten years from the primary, and concludes with the statement that "immunity acquired through vaccination begins to disappear from the second year, and by the tenth year it disappears almost completely."

These different opinions are mentioned simply as illustrating the decided variance of ideas in regard to this question. It would seem as though the subject were worth more than a passing consideration, both because of its relation to public health and because of its bearing on the antivaccination movement. It can scarcely be questioned that systematic revaccination is almost as important as the initial inoculation, and that modern methods of small-pox prevention must take this into account: A system of infantile vaccination which is not followed up by revaccination is only a half measure, and half measures often do a great deal of harm, because they create a false sense of security. Furthermore, if a vaccinated person, whose immunity has lapsed, contracts the disease, it creates a bad effect on the community in which he lives, a distrust in the efficacy of vaccination as a preventive measure.

The literature shows a surprising dearth of data on duration of immunity, presumably due to the difficulty of obtaining definite histories on cases reporting for revaccination, and to the fact that revaccination is not carried out in a systematic way. As a general rule, revaccination, and in a great many sections it is unfortunately true of primary vaccinations as well, is performed only in the event of a small-pox scare and under circumstances which are not favorable to the collection of statistics.

In the present series we had a total of over five hundred cases, sixty-six of these being primary. In only two hundred and fifty-one of the secondaries were we able to get a history as to previous vaccination. It may be mentioned that in considering the periods since previous vaccination no recognition was given to negative inoculations, the history being taken from the last successful vaccination.

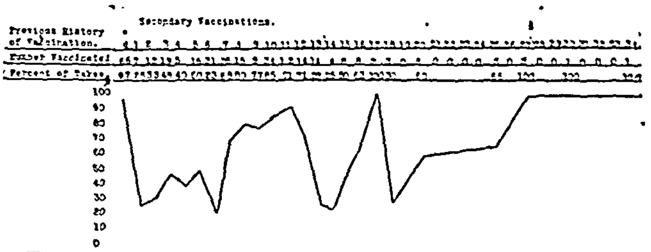

Fig. 1.—Chart showing results of secondary vaccinations. Total number vaccinated, 317. Primary cases vaccinated, 66. Secondary cases vaccinated, 251. Per cent. of takes in primary cases, 97. Per cent. of takes in secondary cases, 58. Star (Footnote *) indicates primary vaccinations. Following figures indicate lapse of years since a successful vaccination.

RESULTS OF REVACCINATION OBTAINED IN THESE CASES WERE AS FOLLOWS:

INTERVAL IN YEARS SINCE LAST VACCINATION	NUMBER VACCINATED	PERCENTAGE OF "TAKES"
1	7	28
2	12	33
3	19	48
4	5	40
5	16	50
6	31	23
7	25	68
8	15	80
9	9	77
10	34	85
11	12	91
12	14	71
13	14	28
14	4	25
15	8	50
16	8	63
17	2	100
18	3	33
20	5	60
25	3	66
27	3	100
30	1	100
34	1	100

With the exception of the patients vaccinated after the first year our results accord fairly well with those reported by Kitasato.

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

[1] Millard: Brit. Med. Journal, March 22, 1913.

It is highly improbable that in the larger series of cases we would have as high as 28 per cent. "takes" in patients who had been successfully vaccinated the year previous. This has been regarded as being more or less of a coincidence, but the fact that revaccination is frequently successful after intervals of from one to three years is in itself significant, and indicates the advisability of the physician being somewhat guarded in statements made as to the duration of immunity, and points to the importance of systematic revaccination.

The question arises as to whether some of the cases included in this series and classed as successful vaccinations might have been spurious ones, as has been suggested in the editorial above referred to, pyogenic infections being mistaken for successful inoculations. This hardly seems probable as there is usually no great amount of difficulty in differentiating between a pyogenic infection and a vaccine pustule, and I believe that I have been reasonably careful in drawing conclusions.

It must be freely admitted that the successful vaccination of these patients is by no means evidence that they would have been susceptible to natural small-pox. It is reasonable to suppose that a higher degree of immunity would be required to resist the direct inoculation than would be necessary to protect the patient against infection in the usual way. Furthermore, clinical experience has demonstrated that systematic revaccination even at intervals of ten years is very efficient in protecting a country or community against small-pox. In Germany revaccination is carried out in the eleventh year, while small-pox is very rare; the same is true of Japan, and it is a universal experience that small-pox in individuals who have been successfully vaccinated within five or six years is decidedly unusual. In this connection, King reports, in the *Lancet* of May 17, 1913, some interesting data based on observations made on Asiatics (Shans, Burmese and Chinese). In a group of 380 adults who had been vaccinated when under 15 years of age, 5.6 per cent., and in a group of ninety-four who had been inoculated above that age, 3.2 per cent. had been attacked by small-pox in later life. In a series of 312 patients who had been inoculated under fifteen years, vaccination resulted successfully in 80.3 per cent, and in twenty-two with a history of having been previously vaccinated after their fifteenth year, 81.8 per cent. resulted in "takes." In ninety-six adults, who had suffered from natural small-pox at various ages, and who were freely marked, 75 per cent. were successfully vaccinated.

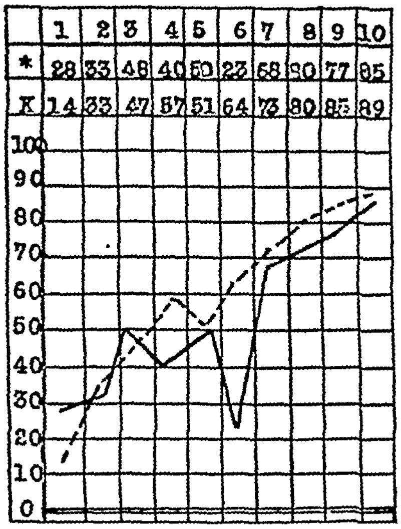


Fig. 2.—Comparison with Kitasato's results. The results in the present series are indicated by solid line and starred figures. Kitasato's results are indicated by dotted line and figures preceded by K.

It can scarcely be doubted that our present system of vaccination is not sufficiently rigid, and that a single successful vaccination confers a false sense of security, not only on the patient, but in many instances on the physician as well. The disease has been widely disseminated during the last year or so, and the indications are that the country as a whole is far from being well protected. In view of the general apathy of the medical profession toward vaccination this is not especially surprising. While the great bulk of medical practitioners undoubtedly believe in vaccination, it is in many instances afforded only a half-hearted support, and is rarely urged by the family physician, excepting in the presence of an epidemic of the disease, or in the case of direct exposure. Even in large cities one is surprised to learn of the large number of people who have never been vaccinated, and in small towns and country sections vaccination is even more neglected. The majority of those from rural districts who have reported to me have never been vaccinated, or even been approached on the subject. These phases of the question, of course, have nothing to do with the present subject, and are merely mentioned in passing as being, with the transient immunity, factors which contribute to the prevalence of small-pox in the United States.

555 Sheridan Avenue.

ABSTRACT OF DISCUSSION

DR. C. N. HENSEL, St. Paul, Minn.: I have examined about a thousand cases of small-pox in my work in the St. Paul Health Department. Of this number, but four patients had been previously successfully vaccinated and showed a definite, typical scar. In these four cases the greatest interval from the last successful vaccination to the contraction of small-pox was twenty-seven years; the shortest interval was twenty years, the intervals in the two remaining cases being twenty-six and twenty-four years, respectively. To find but four cases in a series of a thousand contracting small-pox after previous successful vaccination, and to find the period of immunity ranging from twenty to twenty-seven years, naturally leads to the conclusion that the protection afforded by successful vaccination lasts longer than shown by the records of Dr. Lescohier. This conclusion might be changed by observation on a much larger series of cases, and we might find a much shorter interval between successful vaccination and the contraction of small-pox. I wish to mention an interesting case in which small-pox developed a second time in a person who had previously had the disease. The patient, a boy, aged 9, had, when six months old, contracted a severe attack of small-pox from his mother. The mother gave a clear and definite history of this illness. Eight and a half years later the boy was exposed to small-pox a second time and contracted the disease. I saw him during convalescence from the second attack, with the unmistakable signs of small-pox—the dying lesions on his body and the hard, brown scabs beneath the skin of his palms. The second attack was mild and there were but ten or fifteen lesions on the entire body. I mention this case to add it to the few previously recorded where a person has developed small-pox a second time. The second attacks of small-pox, as a rule, develop many years after the initial attack. This case seems unique, in that the patient developed the second attack so comparatively soon after the first illness.

DR. V. C. VAUGHAN, JR., Detroit: At one time we were unfortunate enough to have a mild epidemic of small-pox in the engineering department of the University of Michigan; in fact, it was so mild that it was not ascertained until we found one of the students picking off some scales, and on subsequent examination found that he had been afflicted with small-pox. We went through that department and found that every unvaccinated person had had small-pox in this very mild form. Another thing about which I wish to speak is the work which has been done in connection with revaccinations and the character of the reaction which we obtained in revaccination. I understand—although Dr. Lescohier's experience is much greater than mine with reference to this matter—that it is seldom that we get the typical reaction which we obtain in the original primary vaccination. Von Pirquet has done a great deal of work on accelerated vaccinations and he has shown that revaccination may be accomplished—may actually represent a true vaccination—and still not be noticed by the attending physician who is looking for the development of the typical lesion. According to the theory of sensitization advanced by Dr. Vaughan, the vaccine body causes a reaction in the body of the person that leads to the production of a ferment, which subsequently causes cleavage of the vaccine body. This same ferment, of course, causes cleavage of the small-pox organism when it gains entrance to the body, and in that manner renders the patient immune. If such a person is revaccinated, if there is a large amount of ferment present the vaccine virus is attacked immediately, before it has had time to grow and multiply, and we have no reaction. If a certain amount of ferment is present, but not sufficient to attack it at once, then we have a mild, but an accelerated, reaction. I think physicians usually vaccinate themselves every time they see a case of small-pox. I certainly do, and I have had a take only once, but on several occasions I have had a notable reddening and itching there. I have said—and other physicians have made the same statement—that I would think it were a take, unless it had come on too early and subsided too rapidly. It really is one of these accelerated von Pirquet reactions, which may be used as a judge of the amount of immunity to the vaccine bodies.

DR. C. A. HARPER, Madison, Wis.: As a field man, I think my observations have strongly confirmed the results observed by Dr. Hensel and Dr. Vaughan. I have made personal observations of about eight hundred cases of small-pox, and only about two patients really had what we would call typical vaccination scars. All the others were either unvaccinated, or a few had scars which would be similar to a scar of infection, and not a typical vaccination scar. I believe that the appearance of small-pox in the field, after one successful vaccination—with the character of small-pox, particularly, that we have been having in this country—is an extremely rare occurrence. I am of the opinion that a revaccination will work much more frequently than small-pox attacks an individual who has been successfully vaccinated. I was vaccinated when a child, then I went into a line of work where I was to be frequently exposed to small-pox. I was vaccinated every year for a period of eight years. Each one of those years I was exposed to small-pox from fifty to two hundred times. In the eighth year the second vaccination took, but I have not had small-pox. I feel that the degree of immunity, with the small-pox that we find to-day—mild in character as it is—is almost absolute, after we have what we call a typical vaccination scar implanted on the body of the individual.

DR. P. M. HALL, Minneapolis: I wish to confirm what Dr. Barper has said: Having been in field work during the past twelve years, and having seen probably about five thousand cases of small-pox, it has been my general observation that we do not see small-pox in those who show a typical vaccinal scar. I will go further than that. I never saw a death from small-pox—and have seen some cases of very virulent type—in a person who gave a history of ever having been vaccinated. With reference to the question of immunity, one peculiar case arose which I have never seen duplicated, showing the beneficial effects of vaccination after a definite exposure. The father of a family was removed on Sunday with definite small-pox, almost in the pustular stage, leaving behind a wife—pregnant and soon to be delivered—and two children, the wife and children never having been vaccinated. They were vaccinated immediately: the vaccinations took, the husband and father being removed the same day. Exactly two weeks from that date (the father still being away) the woman was confined, having a successful, working vaccination on her arm. Her baby took small-pox four days afterward and died.

DR. C. HAMPSON JONES, Baltimore: My practical experience, and what I have read on the subject, has caused me to advocate that every one should be revaccinated at least once in ten years. I have had to deal with several outbreaks of small-pox—in 1899, 1901, 1905-6, and in 1912-13—not one of them with many cases, but all requiring a great deal of activity on our part to lessen the number of cases. With the exception of one man in 1899, in none of these outbreaks were there cases of small-pox in those who had been previously vaccinated, so far as the evidence of the vaccination scar showed. In the last outbreak, which began on Nov. 11, 1912, and the last case was on March 1, 1913, there were fifty-seven cases of small-pox, and not one of those patients had ever been previously vaccinated—there certainly was no scar. On the other hand, every one who had been successfully vaccinated and whom we knew to have been exposed to small-pox escaped. I am inclined to believe that we need careful and lengthy investigation to give us some idea as to the length of time that vaccination gives us protection. According to the number of removes from the original inoculation of the small-pox into the cow, the experimental evidence will show how each one will vary in the length of time of protection given to the unvaccinated individual. I also think that there undoubtedly is a great deal in the length of time than an unvaccinated and a vaccinated person are exposed to small-pox. For example: We segregate those—particularly among the negroes—who have been exposed to small-pox and were not previously vaccinated. It happens, over and over again, that those who have been exposed to small-pox for the first twenty-four or forty-eight hours of the eruption do not contract the disease. On the other hand, if there has been three, four or five days' exposure, it is quite certain that those who have been exposed will be stricken with small-pox.

DR. HAROLD B. WOOD, Rochester, Minn.: It might be well to correct an impression that seems to be circulated throughout the United States, that is, that Minnesota had stopped quarantining for small-pox a few years ago. We have had a number of letters asking how small-pox is controlled in this state. People have an erroneous impression that nothing whatever is done to segregate the people having small-pox. The people are not quarantined as the word is popularly understood in the East and South, but the people who have small-pox and who have not been vaccinated previous to one week before the exposure are actually quarantined within the household and the house is placarded. Compulsory vaccination is not legal here, but those who are exposed are given the option of vaccination within three days after exposure or of being quarantined three weeks. Where this quarantine with placarding has been carried out, there have been no return cases, so far as my records show. There has also been a marked decrease of small-pox in the state since the inauguration of the system. The disease, which has been epidemic throughout the country, has been carried on by cases which have not been discovered and are, in nearly all instances, extremely light cases. Some physicians and the majority of people do not realize that some of the extremely mild infections, where the vesicles are about one-tenth the diameter of the ordinary small-pox pustule, may be highly infectious. We have evidence that severe cases have been transmitted from extremely mild ones in which there are no pustules or scar formation.

DR. GUY L. KIEFER, Detroit: There is a practical suggestion in the paper of Dr. Lescohier, urging us—by us I mean practical health officials—to require vaccinations in all cases of exposure more frequently than we have done in the past. My experience corroborates that of the field men, as they call themselves, who have spoken, and shows that immunity against small-pox, following vaccination, lasts apparently much longer than the immunity against a reinoculation with vaccine virus, and yet there are patients who are taken sick in less time than some of us suppose. For example, the first series of cases that I compiled was about eleven years ago, when we had an outbreak of mild small-pox, consisting of 1,023 cases, and of those, 862 patients had never been vaccinated successfully; 129 had been vaccinated, but in each case the period had been longer than five years, and in most of them longer than ten years, only 32 had been successfully vaccinated within a period of five years or a shorter time, according to their own testimony. We find, from the experiments given in Dr. Lescohier's paper, and from those he quoted, that about 50 per cent. of the persons will be susceptible to a second vaccination. It seems to me a practical suggestion that we might, in all cases of exposure, require the vaccination of all people who have not been successfully vaccinated within five years, and then, *according to experiments*, in at least half of them the vaccination will "take" and it will satisfy the community—it certainly will not do any harm—and it will be the limit of protection.

Dr. A. W. Lescohier, Detroit: I sincerely hope my paper did not carry the impression that I believed that persons who are successfully revaccinated after one or two years would be susceptible to small-pox. I think the evidence, not only in this country, but all over the world, shows that in cases of small-pox in which there is a history of successful vaccination, even if ten or twelve years have elapsed, are rare. This is shown in Germany and Japan, where systematic revaccination is carried out in the eleventh year. The object in presenting these statistics was to indicate the advisability of a systematic revaccination, rather than to throw any discredit on vaccination as at present carried out—that is, infantile vaccination not followed up by revaccination. We cannot but believe that vaccination, even if only carried out in infancy, is the most effective means which we have in stamping out small-pox, but if it can be followed up after a reasonable number of years by reinoculation, the chances of completely controlling the disease will be much better.

A SIMPLIFIED METHOD OF DIRECT BLOOD TRANSFUSION WITH SELF-RETAINING TUBES

L. H. Landon, M.D., Philadelphia
Assistant Surgeon, University Hospital, Philadelphia

The tubes here described were devised some four years ago, primarily for arterial or venous anastomosis and as such were used successfully by me while working in the Laboratory of Experimental Surgery of the University of Pennsylvania, under the direction of Prof. J. Edwin Sweet, to whom I am indebted for many suggestions and helpful advice in the development of the technic.

In the hands of the average surgeon, especially where the operation has to be done outside a hospital or with untrained assistants, the cannulas of Crile or Sweet present certain difficulties in their use, chiefly in applying the retaining ligature and at the same time keeping the end of the vessel properly cuffed back over the tube. Several attempts may be necessary to accomplish this, which is not only trying to the operator but usually ruinous to the success of the operation. The tendency is for the end to retract persistently, hence two assistants are necessary while the operator is adjusting and tying the ligature, and even then the very restricted field, in which at least five hands must work, often adds to the difficulties.

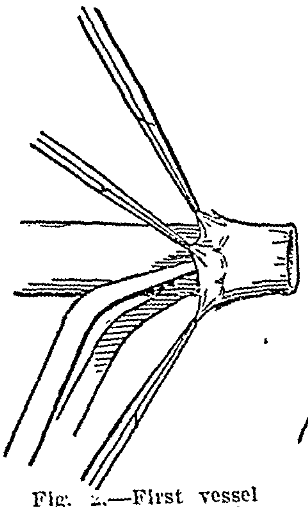


Fig. 2.—First vessel cuffed back over the tube, the points catching wall.

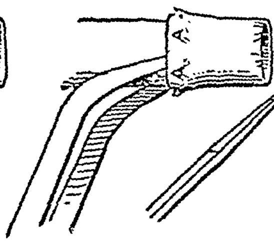


Fig. 3.—Same as Figure 2 with forceps removed and vessel in place.

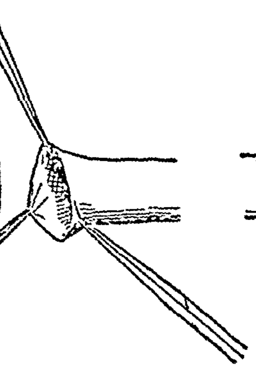


Fig. 4.—Second vessel grasped with forceps.

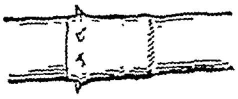


Fig. 5.—Operation completed and forceps removed.

To obviate these disadvantages to a large extent and at the same time to produce a tube suitable for permanent anastomosis in emergency wounds of vessels, the self-retaining cannula was devised. With it any physician can, even with very little experience, quickly perform a successful transfusion.

The tubes, three in a set, vary in diameter from 3 mm. to 5 mm., which gives a sufficient variety to suit most cases. They are 6 mm. in length over all, the tube proper being 4 mm. One end is plain while the other carries five small sharp retaining points arranged at equidistant points around the circumference. These points are slightly flanged outward, and may be bent to any desired angle to suit the individual case. On two sides of the tube about its center and opposite one another are small holes which fit accurately over the two lateral projections on the tips of the blades of the special forceps which serves as a handle, the set-screw holding the forceps tightly in the tube while it is being introduced.

The proper-sized tube having been selected, it is fitted to the handle, the retaining end of the tube being nearest the forceps. The artery or vein is then pushed or pulled through the tube from behind forward, its circumference grasped at three points with mosquito forceps and the vessel cuffed back over the tube, gradually working it back until it can be drawn over the sharp retaining points which pierce it and hold it accurately in place. The tonicity of the vessel walls causes it to hug the tube and hold it over the points. The other vessel, grasped likewise with the mosquito forceps, is now drawn over the cuffed-back vessel on the tube until it also catches on and is held by the points projecting through the walls of the first vessel. After the flow has been started the set-screw is released and the handle forceps is then easily removed, obviating any undue traction on the anastomosis during the transfusion.

The technic is simple, being, with the exception of the tubes, the same as that of Crile, although not requiring the same delicacy and the experience as do the other methods. One should always bear in mind the necessity of doing as little damage as possible to the vessel walls during the manipulations and that the exposed intima should always be well covered with liquid paraffin or kept constantly moistened with saline solution.

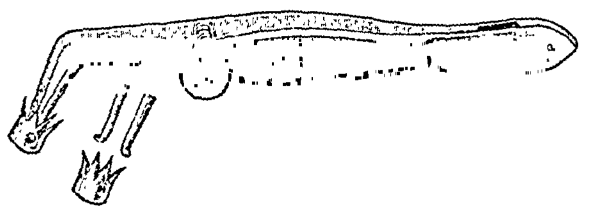


Fig. 1.—Instrument two-thirds size.

1819 Chestnut Street.

AN ADJUSTABLE BED-FRAME

E. Victor Keller, M.D., Canton, Mass.
Assistant Physician at the Massachusetts Hospital School

The Bradford bed-frame has come to be regarded as practically indispensable in the care of many surgical diseases in children requiring bed treatment; and having experienced considerable difficulty in always finding a frame of the proper width and length to fit an individual case even though a large number of frames were available, a method of adjusting the ordinary gas-pipe frame was devised.

Although very simple and inexpensive, it has been found most convenient and has done away with the annoyance of having to wait until a frame could be made, as well as the expense and inconvenience of having a large number of frames constantly on hand.

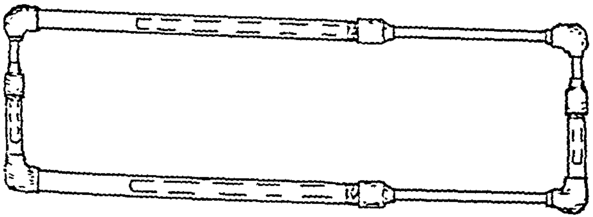
The following description is presented in the hope that an adjustable frame, which can easily be made to fit any average child under 15 years of age, may be of value to others.

Ordinary gas-pipe is used in standard stock sizes as follows, and can be purchased at any plumbing or pipe-fitting concern:

Two pieces of ¼ inch galvanized pipe 8 inches long.
Two pieces of ¼ inch galvanized pipe 30 inches long.
Two pieces of ½ inch galvanized pipe 6½ inches long.
Two pieces of ½ inch galvanized pipe 50 inches long.
Three ½ by ¼ inch elbows.
One ½ by ¼ inch bushing.
One ½ by ½ inch elbow.
Four ½ by ⅜ inch coupling.

The ½ by ⅜-inch coupling without threads in the ⅜-inch end should be used. On one end of each of the ½-inch pipe the threads are cut for 1 inch, which is about twelve threads. Then the two end threads are filed down and will pass into the shoulder of the ⅜-inch end of the ½-inch coupling, increasing the binding over the ¼-inch pipe that telescopes into the ½-inch pipe.

The foregoing four ends must be quartered by placing two blades in back saw, making cuts ½ inch deep. This should be done after the threads have been cut which enables the ½-inch pipe to clamp more firmly the ¼-inch pipe.



Adjustable bed-frame.

The other four ends of the ½-inch pipe should be threaded for half an inch or seven threads; but one end of the ¼-inch pieces needs threading as the other ends pass into the ½-inch pipe. The ½ by ¼-inch bushing is used in one elbow which receives two ¼-inch pipes.

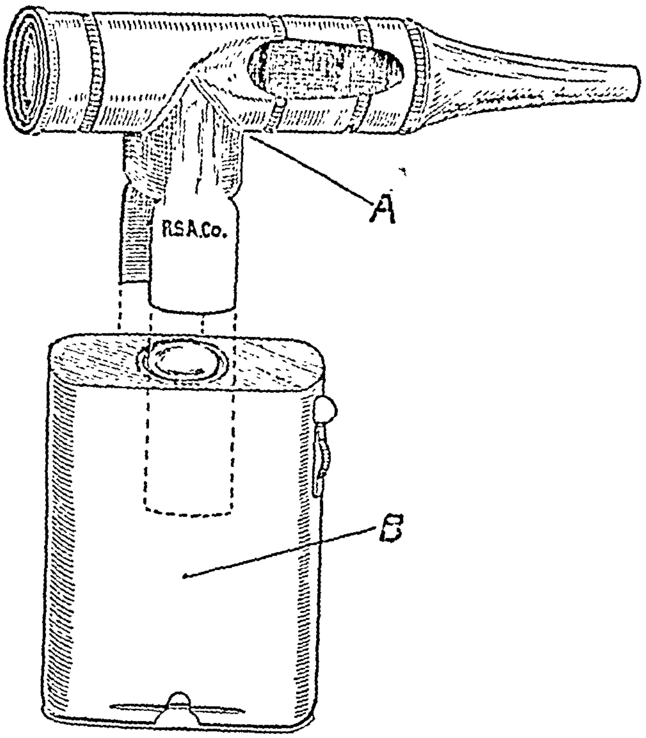
After connecting pipes to elbows, one must be careful to have them at perfect right angles as well as to have the pipe straight so that they will not bind when telescoping. I have found that ether will clean the pipe most satisfactorily after the frame has been put together.

A Stillson wrench is necessary for adjusting this frame to the required length and width.

ILLUMINATED EAR SPECULUM

Frederick A. Kiehle, M.D., Portland, Ore.

The accompanying drawing shows a very satisfactory device for the examination of the ears of patients who are confined to bed. Most physicians are familiar with the difficulties involved in procuring a drop-light and a head mirror in a hospital ward, or the assistance necessary in holding a light and maintaining the proper position of the patient. In the illustration *A* represents the illuminated ear speculum from an outfit designed for use with portable dry cells and wire attachment. The electric light and the attachment plug, however, have been removed, and the vertical cylinder split into two flanges which will slip down as shown by the dotted line, holding *A* firmly on *B*. Within the horizontal cylinder is a mirror fixed obliquely and with a central perforation which throws the light rays from below forward through the speculum and against the tympanum. The fenestration at the side permits of applications being made or a probe passed through the speculum. *B* is simply one of the smaller flat-sided designs of a pocket battery, and should be reversed in the drawing so that the press-button is immediately under the eye-piece. The whole apparatus slips readily into the pocket and is instantly available for use.

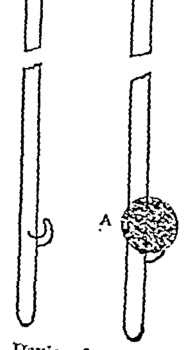


Device used in examining ears of patients confined to bed.

A COIN-CATCHER FOR REMOVING COINS FROM THE ESOPHAGUS

J. R. Gilbert, M.D., Alamogordo, N. Mex.

The country doctor is often handicapped by lack of instruments. I was called to remove a nickel from the esophagus of a 2-year-old child and I had nothing in my armamentarium, nor could I find anything in those of my neighbors, with which I could remove the nickel.



Device for removing coins from the esophagus; *a*, coin.

The simple device that I thought of is to be had in any town. With an awl two small holes are made opposite each other about an inch from the end of a silk urethral bougie about Size 16 A. Some No. 30 brass spring wire is threaded into the holes, and the ends brought out at the open end of the bougie and drawn till a loop of about half an inch is left extending from the holes. With a pair of pliers the loop is now bent into a hook. The hook should extend just far enough to catch the coin.

With the patient anesthetized the instrument is introduced the same as a stomach-tube, and when it is felt to pass the coin, the operator by a sliding motion up and down the esophagus can catch the coin in a few moments. A recently boiled bougie is soft enough to yield to the coin, and it holds it in place while it is being extracted.

This is so simple and yet so efficient a device that the suggestion may be worth while to other country doctors.

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SATURDAY, AUGUST 16, 1913

SUGAR AS FOOD

In these days when newspapers and magazines are continually pouring forth a flood of popular advice about proprieties of diet to a hungry audience that eagerly devours anything pertaining to health, the layman finds it difficult to steer a safe course amid the innumerable "don'ts" of nutrition. Unfortunately, the hygienic preaching in the public columns is sometimes neither orthodox nor rational; and not infrequently it is tinged with the evident desire to produce a telling impression, which seems to be the fundamental aim of modern distributors of news and literature. Thus it has come about that some of the articles of food which entered into the dietary outfit of a past generation have been ruthlessly relegated to the category of alimentary poisons, while products hitherto indifferently accepted are now being clothed in the most subtle health-giving virtues. Amid the traditions of the past, the dogma and propaganda of the present, the enthusiasm of the food faddist and the indifference of a healthy majority, one scarcely knows where to turn for sane and dependable advice. From the dreaded specter of "auto-intoxication"—whatever that may signify—the seeker of dietary truths and health turns to the beneficent refuge of "sour-milk" therapy, as one illusion after another is dispelled.

In the midst of all this uncertainty shared, let us admit it, by the average physician as well as by his patient, it is a relief to find easily accessible sources of information that is as a rule satisfying, sane and dependable. We refer here in particular to the essays prepared under the supervision of the nutrition investigations of the Office of Experiment Stations in the U. S. Department of Agriculture. These valuable monographs[1] have frequently been referred to in The Journal. Unfortunately they do not receive the most appropriate distribution that they deserve, owing to their utterly misleading title of "Farmers' Bulletins" which an unkind political fate has made them endure. They are, in truth, the people's bulletins. One must go far to find a more comprehensive, unbiased and intelligently compiled account of sugar and its value as food than is presented in the latest Bulletin by Mrs. Mary Hinman Abel[2] of Baltimore.

Like meats and bread and sundry other widely used dietary articles, sugar has received its share of criticism and been charged with its quota of participation in the genesis of human ills. Out of a world's crop of more than 16 million tons of sucrose sugar (including cane-sugar and beet-sugar) the people of the United States consume nearly 82 pounds per capita. From the point of view of the energy furnished, sugar stands near the head of the list in respect to economy of cost. The fact that ten cents' worth of sugar at six cents per pound would furnish about three thousand calories, makes it evident that this carbohydrate is one of the cheapest items in the dietary. Few realize, however, that, unlike meat and bread, sugar has been a staple article of food for only a few generations; indeed, only in the last three quarters of a century has it been produced in such quantities and at such a price as to bring it into really general use. It is, accordingly, not inappropriate to inquire whether or not this extensive invasion of a comparatively new food product into the nutrition of man has justified itself in every way.

In view of the laxity which has until quite recently existed in respect to the purity of "manufactured" foods it is gratifying to know that sugars as a class, both the high and the low grades as now found on the market, are practically free from adulteration. The low price of cane-sugar, in comparison with the prices of substances that might be used for adulteration, protects the finished product from such attempts. Thus the widespread popular belief that granulated sugar is often adulterated with white sand or finely ground rock, and that pulverized sugar is commonly adulterated with starch or lime-dust, ought to be finally dispelled. Other popular fallacies entertained about sugar in its physiologic functions deserve a similar fate. It is sometimes said that sugar produces gout, though we know of no proof of such a hypothesis. Sugar-eating has been pointed to as a "cause" of diabetes, without any justification in the way of tenable evidence. Sugar is further charged with being harmful to the teeth; yet it can easily be maintained that the texture of the food-supply quite as much as its chemical make-up determines the behavior of the mouth bacteria which are made responsible for dental caries.

It needs to be borne in mind that, quite apart from its value as a food, sugar has become important as a flavor in the diet of man. This fact may at times favor an overindulgence; for unlike what pertains to more insipid types of nourishment, much of the sugar used is consumed for its agreeable flavor and not because it is recognized as a nutrient which is required to satisfy body needs. Probably one of the lessons that deserve to be widely inculcated in respect to sugar lies in the possibilities which it furnishes in the nature of a readily soluble, speedily available foodstuff; that is, we need to appreciate better the nutrient rather than the adjuvant rôle of sugar. In the diet of the undernourished the employment of larger amounts of sugars is beginning to come into vogue. If extreme sweetness is objectionable the mildly sweet milk-sugar has been used to fortify the food-intake, for example, in the "high-calorie" diet in typhoid fever.

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[1] A list giving the titles of all Farmers' Bulletins available for distribution will be sent free on application to a member of Congress or the Secretary of Agriculture.

[2] Abel, Mary H.: Sugar and Its Value as Food, Farmers' Bull. 535, U. S. Dept. Agric., Washington, 1913, p. 32.

Mrs. Abel has ascertained that about two pounds of sugar per week per person are consumed by large numbers of well-to-do families in this country, and experience attests the satisfactory utilization of such quantities. She remarks that the question of possible permanent injury from the use of fairly large amounts of sugar seems to be an open one, and certainly the extreme views which are sometimes found in popular writings do not seem to be entertained by physiologists, the consensus of opinion being that used in reasonable amounts sugar is both wholesome and nutritious. The key to the situation lies in the truth that sugar is a concentrated food, and therefore should be eaten in moderate quantities. Further, like other concentrated foods, sugar seems best fitted for assimilation by the body when supplied with other materials which dilute it or give it the necessary bulk.

THE PRESENT STATUS OF ABDERHALDEN'S SERODIAGNOSIS

In 1912 Abderhalden described a method for the serodiagnosis of pregnancy which has been discussed in these columns.[1] Having found that if foreign protein is injected into the blood or introduced parenterally, ferments for the destruction of this substance are produced, he next showed that in the blood of a pregnant animal there circulates a proteolytic ferment which causes a breaking down or cleavage of placental proteins and furthermore that there is in the blood of pregnant women proteolytic ferment or ferments for human placental tissue.

Two methods are used to show the presence of these ferments, the method of dialyzation and the optic method. The first method is carried out as follows: A membrane is used which allows peptone to pass but retains unsplit protein.[2] On one side of the membrane is placed 1 gm. of human placental tissue, which has been carefully washed and boiled in five times its volume of water repeatedly until the water no longer gives the biuret or ninhydrin reaction, thus showing that no peptone is present, and to this are added from 1.5 to 3 c.c. of the serum to be tested. The serum is obtained under strict aseptic precautions and should be secured absolutely pure without any trace of products of hemolysis. The membrane is then placed in a small vessel containing from 15 to 20 c.c. of distilled water, and this is incubated for from sixteen to twenty-four hours. The outer fluid is then tested for the presence of peptone. If any is present, it means that the placental protein has been split and we have a positive result. Abderhalden recommends the ninhydrin test as more exact and as permitting finer differentiation in colors than the biuret test.

When the optic method is used a mixture of 1 c.c. of a 10 per cent. solution of placental tissue in physiologic salt solution and of 2 c.c. of serum is placed in a small polarization tube and the initial rotation is read in the polariscope. Then the tube is placed in an incubator and the rotation determined at various intervals up to thirty-six hours. The maximum change with non-pregnant serum never exceeds 0.03 degree, while pregnant serum gives a change in rotation from 0.05 to 0.2 degree.

The observation by Abderhalden that the serum of pregnant women splits up human placental protein has been confirmed by numerous observers in what appears to be more than two thousand cases.[3]

Most of the authors cited have obtained positive results in practically all cases of pregnancy. On the other hand, less favorable results are reported by Engelhorn, Behne, and by Williams and Pearce, who assert that they have also obtained positive results in other conditions than pregnancy. They conclude therefore that "the test cannot be accepted as an accurate clinical method until it has been more thoroughly investigated and the possible sources of error corrected." It is interesting to note that Schlimpert and Hendry, who tested in all 316 cases, found at least eight or ten different errors in their earlier work which interfered with accuracy. They, as well as many others, including Abderhalden himself, emphasize the great importance of an exact technic. After numerous trials Schlimpert and Hendry obtained positive results in all of their last seventy-nine cases of pregnancy.

Lindig and later King have prepared dried extracts of placenta in sealed tubes which they believe are an improvement on Abderhalden's method of preparing and keeping the placental tissue; but Abderhalden holds that Lindig's preparations of dried placenta are untrustworthy and that all his powders after a few months will give a positive ninhydrin test.

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[1] A Biologic Diagnosis of Pregnancy, editorial, THE JOURNAL A. M. A., May 25, 1912, p. 1604. The Blood Test for Pregnancy, editorial, ibid., Dec. 7, 1912, p. 2073.

[2] The preparation, method of testing, and other steps are given in detail by Judd, Charles C. W.: The Serum Diagnosis of Pregnancy, THE JOURNAL A. M. A., June 21, 1913, p. 1947, and by Schwarz: Interstate Med. Jour., 1913, xx, 195.

[3] Abderhalden: München. med. Wchnschr., 1912, lix, 1305; 1912, lix, 1939; 1912, lix, 2172; Deutsch. med. Wchnschr., 1912, xxxviii, 2160; 1912, xxxviii, 2252; Ztschr. f. physiol. Chem., 1912, lxxvii, 249.
Schiff: München. med. Wchnschr., 1913, lx, 1197.
Epstein: Wien. klin. Wchnschr., 1913, xxvi, 649.
Schlimpert and Hendry: München. med. Wchnschr., 1913, lx, 681.
Jonas: Deutsch. med. Wchnschr., 1913, xxxix, 1099.
Heimann: München. med. Wchnschr., 1913, lx, 915.
Henkel: Arch. f. Gynäk., 1913, lxxix, 56.
Veit: Ztschr. f. Geburtsh. u. Gynäk., 1912, lxxii, 463.
Markus and Münzer: Berl. klin. Wchnschr., 1913, l, 776.
McCord: Surg., Gynec. and Obst., 1913, xvi, 418.
Williams and Pearce: Surg., Gynec. and Obst., 1913, xvi, 411.
Behne: Zentralbl. f. Gynäk., 1913, No. 17.
Ekler: Wien. klin. Wchnschr., 1913, No. 18.
Wegener: München. med. Wchnschr., 1913, lx, 1197.
Fauser: Deutsch. med. Wchnschr., 1913, xxxix, 304; 1912, xxxviii, 2446.
Engelhorn: München. med. Wchnschr., 1913, lx, 587.
Lindig: München. med. Wchnschr., 1913, lx, 288.
Franz and Jahrisch: Wien. klin. Wchnschr., 1912, xxv, 1441.
King: München. med. Wchnschr., 1913, lx, 1198.

We must conclude then that so far as pregnancy is concerned we have here a method of diagnosis of practical value and wide applicability. The results at hand show that the ferment is present in the blood from the sixth week after the last menstruation until the end of the third week post partum. Experiments on animals have shown that the reaction may be obtained within twenty-four hours after implantation of an ovum. The ferment is present also in case of extra-uterine pregnancy.

This method of diagnosis has an even wider application. Besides hypersecretion and hyposecretion of ductless and other glands we may conceive also of a secretion of unfinished or morbid substances from the glands, which may act as foreign materials against which ferments are produced which split them up. In dementia praecox Fauser says that there is a ferment which breaks up substances from the genital gland. The genital glands of old men and women as well as those of patients with dementia praecox serve as test objects, but there is no reaction with ovarian tissue and serum from male patients or with testicular tissue and serum from female patients. In a few instances thyroid tissue is split up. More recently Wegener[4] has reported the results of a study of two hundred cases of different nervous diseases. In dementia praecox in women he found that the serum would split up ovarian and tube tissue but not testicular tissue. The reverse was true for men. In some instances lymph-node substance was also affected. In maniacal depressive insanity proteolytic ferments could not be demonstrated in the serum, thus indicating that the test may serve as an aid in differential diagnosis. In epilepsy Wegener found that the serum would cause a cleavage of brain substance only in those cases in which dementia was present. In all syphilitic and parasyphilitic disorders he found that the serum caused cleavage of brain substance but not that of other organs. In a case of neuritis he found that the blood-serum reacted with muscle substance but not with other organs.

Lampé and Papozolu[5] tested the serum of thirty normal persons with various organs and obtained no evidences of splitting of proteins.

Frank and Rosenthal[6] attempted to determine what relationship, if any, existed between these ferments and immune bodies. They found that the latter are present when the former are absent, and hence no relationship could be traced.

Münzer suggests that the cerebrospinal fluid should be examined for foreign elements, as brain substance in dementia praecox and general paralysis.

The possibilities indicated seem large. Almost daily new observations are recorded and there is good reason to believe that real additions to our knowledge of many diseases will result from the use of Abderhalden's method.

SOME UNDERLYING FACTS REGARDING LIME THERAPY

It is more than probable that the salts of calcium deserve first place among components of living tissues in respect to their wide-spread distribution in the animal economy as well as to the quantity in which they occur. There is not an organism, tissue, cell or secretion in which the element calcium is missing. The lime-salts play both active and passive parts, now functioning as the inert framework of some structure like the skeleton or, again, participating in important biologic reactions. It is a truism that calcium is necessary for the growing individual—as essential, indeed, as any other single element. The characteristic diseased conditions, such as osteoporosis, associated with the deficiency of calcium in the dietary of the developing organism are definite and determinable. It seems likely, furthermore, that even the fully grown individual requires a certain minimum of calcium if nutritive equilibrium and health are permanently to be maintained. There are inevitable losses of lime in the excretions; and if it plays a conspicuous rôle in important functions such as the irritability of muscle and nerve, the coagulability of the blood and the maintenance of a "physiologically balanced" nutrient medium which bathes the tissues, calcium must be replaced when necessary. The therapeutist and the dietitian, on whom devolves the duty of correcting deficiencies in the body's intake and of introducing essential compounds, are interested in knowing whether and, if so, to what extent ingested lime-salts actually enter the circulation and take part in the metabolism.

The possibility of successfully feeding lime-salts to growing individuals is now undisputed. There is abundant evidence of calcium absorption in these cases, even when the element is administered in a comparatively insoluble form. When, however, one seeks for the demonstration of actual absorption of inorganic lime-salts by the adult there is mostly a confusion of testimony. Nor is the demonstration an easy one; for it must be recalled that calcium may be both absorbed and excreted by the bowel, so that only careful balances of intake and output over longer periods can give a final answer as to whether or not the actual store of lime has been enriched.

The lack of adequate knowledge in this field has been a serious defect in relation to the intelligent therapeutic use of lime-salts. They are freely administered with the intent of improving coagulability of the blood, of relieving urticarias, of acting on the sympathetic system, of promoting phagocytosis and of accomplishing a dozen other ends—all without the slightest evidence that a single milligram actually traverses the intestinal wall and enters the blood-stream for distribution. Clinicians have treated hemophilia and aneurysm with lime on the hypothesis of absorption, but without a scintilla of proof. For this reason we welcome evidence of a positive and convincing nature, such as has lately been offered by Voorhoeve[1] of the University Clinic in Amsterdam. He has found it possible to promote a retention of lime even in normal well-fed adults, by administration of calcium lactate in addition to the dietary. This could be continued for more than merely brief transitory periods. The ingestion of liberal amounts of either the lactate or the chlorid of calcium was followed by an actual significant increase in the content of calcium in the blood itself.[2] The higher level thus attained may persist for weeks and even after the use of the calcium salt is discontinued. Liberal dosages, by which are meant portions of several grams, are necessary to produce striking results; but no untoward results have been observed. Many possibilities have loomed up of late in respect to the use of calcium in therapy. The first rational step in applying them consists in learning the fate of the drug administered. Satisfactory beginnings in this direction have at length begun to be reported.

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[4] Wegener: München. med. Wchnschr., 1913, lx, 1197.

[5] Lampé and Papozolu: München. med. Wchnschr., 1913, lx, 1423.

[6] Frank and Rosenthal: München. med. Wchnschr., 1913, lx, 1425

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[1] Voorhoeve, N.: Einfluss grosser Kalkgaben auf die Kalkbilanz, Deutsch. Arch. f. klin. Med., 1913, cx, 461.

[2] Voorhoeve, N.: Beiträge zum Kalkstoffwechsel, Biochem. Ztschr., 1911, xxxii, 394.

THE USEFUL SIMIAN

Scientists fear the extinction of the gorilla, chimpanzee, orang and gibbon within a century unless some means be taken to prevent it. The study of these anthropoids has proved so valuable that their extinction would be a loss to science and to medicine. Hence it is proposed to establish an experiment station in the Canary Islands within easy reach of European capitals and in a climate ideal for anthropoids. The "primates" could be transported thither from Africa, to live unmolested, except by investigators, and to propagate their species to be used for the enlightenment of future generations. It is purposed to make these creatures useful in experimental psychology—to study their phonation, gesture, comprehension of spoken language, enumeration, color perception, the educational possibilities of the hand, and other phenomena. Besides, all other branches of biologic study are contemplated—breeding, crossing experiments, the problem of the evolutional relationship between anthropoids and man, the hypothesis of a double origin of modern mankind, and the like; not neglecting the belief universal among savages (which would argue the existence of simian traits at present unknown to civilization) that the anthropoids dwelling with them are not brutes, but men like themselves.

In a very material way, indeed, the "primates" have been useful to man; they have helped greatly to settle the important question first propounded more than a decade ago, whether or not bovine tuberculosis is transmissible to human beings. By feeding and by inoculation with the bovine tubercle bacillus this disease has been produced in apes. It was easily proved, of course, that the bacillus of human tuberculosis would develop consumption in the lower animals; but to prove the converse was obviously not so easy.

Indeed, Metchnikoff and his colleagues at the Pasteur Institute in Paris have demonstrated a whole series of diseases which are common to man and the anthropoid apes, but which attack no other animal; and they have proved that protective and curative serums can be produced by experimentation on these apes. There is certainly a profound resemblance in the body chemistry; and there are also biologic similarities no less striking than the anatomic ones which are so uncannily obvious.

When a rabbit is injected with the blood of another species, there develops in its blood-serum a substance which will precipitate the blood-serum of that particular species and no other. Thus, if the blood of man has been injected into the rabbit, its blood-serum will precipitate the blood-serum of man but not that of the dog or cat. This test, which has gained an established position in medical jurisprudence, confirms the near relation of the anthropoid apes to man by the fact that it does not distinguish the blood of one from the other.

Current Comment

HEALTH OF EMPLOYEES AND INDUSTRIAL EFFICIENCY

The health of the worker is an essential element in the problem of industrial efficiency. From the point of view of the employer this should be considered, if in no other way, at least as an economic question. Failure of the captains of industry to recognize and act on this fact is a reflection on their capability as managers of great enterprises. Recently the importance of the welfare of workers has been pretty generally recognized among the employers of labor in an awakening not altogether selfish, it is believed; and the efforts made by employers to improve conditions are most gratifying. An interesting record of measures and methods adopted by a number of great enterprises in Chicago to attain greater efficiency and to safeguard and improve health conditions among employees is found in a special number[1] of the *Bulletin of the Chicago Tuberculosis Institute*. This private philanthropic organization in 1911, in pursuance of the purpose of its organization, considered a plan for the early detection of tuberculosis among employees and appointed a special committee on factories, which marked the beginning of a systematic campaign for the medical examination of employees in Chicago. Emphasis was at first laid on the detection of tuberculosis, but later the campaign was extended to the general medical examination of employees for any causes of deterioration in health and efficiency, and a definite scheme for the examination for tuberculosis as well as an outline of a method for the general medical examination of workers was prepared by the factory committee. Efforts to enlist the employers of labor in the plan met gratifying response, and through conferences between the committee and lay and medical representatives of individual companies increasing interest in the subject has been created. The *Bulletin* contains articles by the medical chiefs of seven large employing concerns in

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[1] Sachs, Theodore B., and others: Medical Examination of Employees, Bull. Chicago Tuberc. Inst., June 1, 1913.

Chicago setting forth the organization, plans and methods of each in securing greater health efficiency among employees and giving a summary of the results so far attained. Among the companies represented in these articles are two large mail-order houses, an agricultural implement factory, one of the packing companies, a telephone company, a lighting company and a railway company. The experience of these representative companies constitutes an interesting record and may serve as an example and a guide to other industries in the development of efficiency through improved health conditions among the workers.

PEPTAMINS

The successful synthetic production of compounds of the epinephrin type, the discovery of the occasional formation, within the body, of amins derived from the amino-acid disintegration fragments of proteins, and the demonstration that many of these can induce very decided physiologic effects, have given a new impetus to the investigation of the pharmacologic possibilities of new compounds in this field. Accordingly, we now meet the names tyramin, histamin, etc., as abbreviations for the amins formed from such amino-acids as tyrosin and histidin. In general it may be said that they exert a marked effect on unstriated muscle of the involuntary type. To these interesting compounds, which are actually known to arise at times through bacterial activity in the alimentary tract, a related type of synthetic products has lately been added under the designation of peptamins,[1] to distinguish them from the less complex forms described before. Precisely as tyramin (para-oxyphenylethylamin) is related to tyrosin (para-oxyphenylalanin [alanin is aminopropionic acid]), so the newer amins are derived from polypeptids instead of simple amino-acids. Those already reported on are the glycyl-oxyphenylethylamin, alanyl-oxyphenylethylamin and glycyl-beta-imidazolylethylamin—all prepared by the union of amino-acids with the already familiar amins. Like the latter they also exhibit a peripheral action on unstriped muscle, as it is found in the blood-vessels, intestines and uterus, for example. From the point of view of dosage the effects of the new derivatives are distinctly less pronounced, however. These new syntheses and observations are an interesting step in the physiologic and pharmacologic study of the amins in general, which has now become a most timely topic.

STATE EXAMINING BOARDS AND MEDICAL CURRICULUMS

For many years the seriously overcrowded condition of the medical curriculum has been clearly recognized. Not only was it essential to have a revision of the subjects included in the curriculum and a readjustment in the number of hours allotted to each, but it was also highly important that there should be a considerable reduction in the total number of hours. With these objects in view, in 1908 the Council on Medical Education appointed a special committee of one hundred leading medical educators, who, with thirty or more collaborators, made a thorough study of the problem. In 1909 this special committee reported a "model medical curriculum," including the suggestion that the total for the four years be kept between 3,600 and 4,000 hours. A similar study was made by a committee of the Association of American Medical Colleges, and that committee made a similar recommendation. In spite of the careful work and the recommendations made by these committees, however, state board rulings and medical practice acts are being adopted demanding that students be required to complete an excessive amount of class-room work. Last year the licensing board of Pennsylvania announced that, in order to be recognized by that body, medical colleges must require at least thirty-five hours of class-room work each week for thirty-two weeks, a total in the four years of 4,480 hours. And now California's new practice act requires that the student must have completed 4,800 hours of work in the four years! With that quantity of work, how is the student to find time to eat and sleep, let alone to think and to digest what he studies? It is quite as impossible to develop thoroughly qualified physicians by exacting a maximum amount of class-room work as it is to develop strong, able-bodied men by forcing them to partake each day of an excessive amount of food. It is as essential that intellectual food, as it is that physical food, be limited to the quantity that can be assimilated and digested. Furthermore, with the rapid advancement of medical research in our medical schools it is highly important that the student should have time to devote to such work. It is hoped, therefore, that all the agencies having in charge the matters pertaining to medical education will act in harmony regarding the proper quality and quantity of work making up the medical curriculum.

THE ALLEGED CONTAMINATION OF MORPHIN WITH APOMORPHIN

The alkaloid apomorphin, characterized by unusual properties as an emetic, is prepared by the action of mineral acids on morphin. Probably this accounts for the idea held by many that the nausea and vomiting which may attend the administration of morphin may to a greater or less degree be due to the presence of contaminating apomorphin. It has been the clinician rather than the chemist who is responsible for the circulated belief that apomorphin may be formed when solutions of morphin are heated or the alkaloid is kept in solution for any length of time. In some places it is an inherited notion that old solutions of the opium alkaloids are likely to develop apomorphin. Feinberg[1] of Zürich has tested the possibilities of a transformation of morphin in the various ways commonly ascribed as responsible for the alleged appearance of the emetic apomorphin. His chemically controlled experiments make clear that this change cannot be demonstrated even after long-continued boiling of morphin itself or morphin hydrochlorid or morphin-containing fluids. Nor does the change manifest itself in the presence of nutrient substances which serve as mediums for the growth of micro-organisms. This long-supported conception can therefore safely be eliminated from consideration in the practical use of morphin products.

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[1] Guggenheim, M.: Proteinogene Amine, Therapeut. Monatsh., 1913, xxvii; Biochem. Ztschr., 1913, li, 369.

[1] Feinberg, M.: Beiträge zur Kenntnis des Apomorphins, Ztschr. f. physiol. Chem., 1913, lxxxiv, 363.

Medical News

CALIFORNIA

Office Building Planned.—Plans are said to be near completion for the erection of a twelve-story office building for the use of the Los Angeles Medical Association and physicians of the city.

Exposition Emergency Hospital.—Space in the Service Building, at the foot of Fillmore Street, has been reserved for the Emergency Hospital for the exposition at San Francisco in 1915.

Malicious Charges Defeated.—Dr. B. J. O'Neill, president of the San Diego Board of Health, and Dr. Francis H. Mead, the health officer of the City of San Diego, were charged by a disgruntled milkman, the former with having tried over the telephone to obtain milk free of cost as president of the Board of Health, the latter with having received milk and cream without charge. The milkman in question had been forbidden by the board to label and advertise his milk as "Certified" and subsequently "Pasteurized" which it was not. Neither physician had any difficulty in proving that these charges were purely malicious and did not rest on any particle of evidence in an inquiry which they both demanded before the mayor.

ILLINOIS

Plan for County Hospital.—At a recent meeting of the Douglas County Medical Society a movement was started to build a county hospital. The plan is to solicit subscriptions to the amount of about $25,000 among the residents of the county, and with this amount to establish a hospital at Tuscola.

De Kalb Sanatorium.—A massmeeting was held at the Kishwaukee Country Club under the auspices of the De Kalb County Medical Association to inaugurate measures for the establishment of a county sanatorium for tuberculosis. Dr. W. A. Evans, Chicago, delivered the address and steps were taken for the organization of a society to take the matter in charge.

Personal.—Dr. Frank P. Norbury, alienist of the State Board of Administration, has resigned to take effect September 30. Dr. Norbury will engage in practice in Springfield. ——Dr. John F. Taylor, Buda, who suffered from sunstroke while driving his automobile near Buda, lost control of his car which was wrecked, and in the wreck Dr. Taylor sustained serious injuries.——Dr. H. G. Hardt, superintendent of the Lincoln State Colony and School, has resigned to take effect August 10. He will locate for practice in Chicago.——Dr. George Thomas Palmer, superintendent of health of Springfield, has resigned.——Dr. Thomas H. Leonard, Lincoln, has been appointed superintendent of the Lincoln State School and Colony.——Dr. and Mrs. R. H. Good, River Forest; Dr. J. F. Percy, Galesburg; Dr. George N. Kreider, Springfield, and Dr. Carroll B. Welton and family, Peoria, have sailed for Europe.——Dr. T. H. Culhane has been appointed a member of the State Civil Service Commission.——Dr. A. T. Davis, St. Charles, was operated on for appendicitis in St. Joseph's Hospital, Elgin, July 24.——Dr. J. E. Inskeep, Mount Carmel, announces that he intends to retire from active practice to establish business in the West.

Chicago

Personal.—Dr. George G. Davis, instructor in surgery at Rush Medical College, has obtained leave of absence for one year and sailed for Manila August 12, where he will serve as associate professor of surgery in the University of the Philippines.——Dr. and Mrs. Joseph Krost and Drs. Robert Sonnenschein and Julius B. Beck have sailed for Europe.——Dr. Anna Dwyer has been appointed a member of the State Charities Commission.——At the sixtieth annual commencement of the University of Michigan, Ann Arbor, the following honorary degrees were conferred on Chicago physicians: D.Sc., Dr. Ludvig Hektoen; M.A., Dr. Bertha Van Hoosen.

INDIANA

Personal.—Dr. Warren S. Williams has resigned as a member of the Kendallville Board of Health.——Drs. Carl L. Souder and Ernest V. Nolt were seriously injured as the result of an automobile accident near Columbia City, July 3.

New County Asylums Ordered.—At the quarterly meeting of the State Board of Charities in Indianapolis, July 29, the construction of a new asylum for the Fayette County Poor Farm was recommended and plans for an addition and improvement to the La Porte County Poor Asylum to cost about $25,000 were approved. During the quarter ended July 19, twenty-six maternity hospitals were licensed by the board, twenty-four boarding homes for children, one boarding house for infants and one placing agency.

KANSAS

Personal.—Dr. Francis A. Carmichael, Goodland, has been appointed superintendent of the State Hospital at Osawatomie.——Dr. William W. Minick, formerly mayor of Wichita, has resumed the practice of medicine.——Dr. George L. A. Hamilton, Kansas City, has been appointed interpreter and a member of the medical staff of the Bureau of Immigration, New York City.——Dr. Samuel J. Crumbine, Topeka, secretary of the State Board of Health, underwent operation in Cleveland, July 18, and is reported to be doing well.

State Sanatorium Located.—It has been decided to locate the Kansas Tuberculosis Sanatorium about three miles east of Norton. Under the law which appropriated $49,500 for the sanatorium and its operation, it is provided that one hundred and sixty acres be given to the state. One large building will be erected as the administration building and residence of the superintendent and the other buildings will be small cottages or shacks with large porches. It is expected that the sanatorium will be ready to receive patients by the first of the year.

KENTUCKY

Surgical Department of Hospital Opened.—The surgical department of the W. W. Massie Memorial Hospital, Lexington, was opened for the reception of patients, July 10.

New Officers.—Tri-County Medical Society (Warren, Simpson and Logan), at Franklin, July 18: president, Dr. Wm. A. Guthrie, Franklin; secretary, Dr. John H. Blackburn, Bowling Green (reelected).

Personal.—Dr. Joseph W. Irwin, Louisville, has left for Europe.——Dr. S. L. Tabb, Elizabethtown, fell August 1, fracturing his right leg below the knee.——Dr. James A. Southall, Hopkinsville, was thrown from his buggy August 29 and injured his spine.——Dr. Gaylord C. Hall, Louisville, who was operated on recently for appendicitis at St. Anthony's Hospital, is reported to be improving.——Dr. Frank A. Taylor, Somerset, was thrown from his horse recently, fracturing his leg and necessitating the amputation of the right foot above the ankle.——Dr. L. S. McMurtry, Louisville, has sailed for Europe.——Dr. and Mrs. Joseph M. Matthews, Louisville, are making an extended visit on the Pacific Coast.——The office of Dr. I. D. Winston, Sturgis, was burned July 6.

MARYLAND

Tuberculosis Hospital Completed.—The Allegheny County Tuberculosis Sanatorium on Haystack Mountain near Cumberland, is practically completed and is expected to be ready to receive patients this month.

Fahrney Reunion.—The ninth annual reunion of the descendents of Dr. Peter Fahrney was held at San Mar, near Boonesboro, July 28. About two hundred members of the family were present from Maryland, Pennsylvania and the Virginias and elsewhere, and addresses were made by Drs. Peter Fahrney, Hagerstown, and O. A. Highbager, Waynesboro, Pa. It was decided to erect a monument to Dr. Fahrney at Fahrney's Church.

Baltimore

Personal.—Dr. Henry G. Branham was operated on at the Franklin Square Hospital, July 31, for disease of the intestine and is reported to be doing well.——Dr. James J. Mills sailed for Antwerp recently.

Extension of Dispensary.—Work has been commenced on the extension of the Johns Hopkins Hospital Dispensary. The building to be added includes a laboratory and twelve examining rooms and will be 100 by 18 feet and one story in height. One story is also to be added to the pathologic building to allow more room for the work of this department. The improvements will cost $15,000.

MICHIGAN

Sanitary Engineer Appointed.—It is announced that the State Board of Health has decided to offer the position of state sanitary engineer to Prof. E. D. Rich of the University of Michigan.

Health Train Tours State.—The State Health Exhibition Train began its tour of the state August 4, and will be on the road the greater part of the month. The purpose of the tour is to conduct an educational campaign in sanitary and health methods laying especial emphasis on precautions against the spread of tuberculosis.

Sanatorium Notes.—The first annual report of the Houghton County Tuberculosis Sanatorium states that since its establishment, eighty-six patients have been received in the sanatorium. Of these, eight were discharged as arrested cases, six as improved, twenty-nine unimproved and eighteen died, and there are now in the institution twenty-five patients.——The new tuberculosis hospital for the city and county of Kalamazoo, erected at a cost of $40,000, is nearly ready.

MINNESOTA

Roof Garden Sanatorium for Children.—A roof hospital for tubercular children has been established on the roof of the Minneapolis City Hospital with accommodation for forty children.

Personal.—Dr. Edward W. Buckley, St. Paul, has been reelected supreme physician of the Knights of Columbus.——Dr. A. B. Ancker, for thirty years superintendent of the city and county hospital of St. Paul, was given a surprise reception by nurses and interns, August 1.——Dr. Robinson Bosworth has been elected executive surgeon of the Minnesota Association for the Prevention and Relief of Tuberculosis.——Dr. Ernest B. Hoag, special director of school hygiene for the Minnesota State Board of Health, has finished his work and expects to return to his home in California.——Dr. Frank Smithies, Rochester, has resigned as gastroenterologist in the Mayo clinic to become a member of the faculty of the Medical School of the University of Minnesota, Minneapolis.

NEW MEXICO

Low Grade Colleges Not Recognized.—At a recent meeting of the New Mexico Board of Medical Examiners a rule was adopted that hereafter diplomas granted by colleges listed in Class C by the Council on Medical Education of the American Medical Association will not be recognized by that board.

Personal.—Dr. L. K. Warren, Cloud Croft, fractured his leg just above the ankle in a runaway accident, recently.——Judge Leahy has given a judgment for $9,000 in favor of Dr. Harry M. Smith against the board of trustees of the New Mexico Hospital for the Insane. Dr. Smith charged a violation of contract and asked damages of $15,000.

NEW YORK

Personal.—Dr. A. K. Doig, Nyack, has undergone operation for appendicitis and is at the same time suffering from blood-poisoning, the result of an infection of the thumb.——Dr. James S. Allen, Geneva, has sailed for Europe.

Tuberculosis Notes.—The Board of Supervisors of Suffolk County has decided to take title to a tract at Holtsville where it is planned to establish a county sanatorium for tuberculosis.——A cottage at Estey's Point has been secured for the Ithaca Preventorium for Tuberculosis. The property is much superior to the house previously secured on the Mecklenburg Road. It is more accessible and has a plentiful supply of pure water.——The supervisors of Cattaraugus County have voted an appropriation of $18,000 for a building and site for a county tuberculosis hospital. A site has been tentatively selected between Salamanca and Little Valley.——The supervisors of Saratoga County have appropriated $8,000 toward the erection of a county tuberculosis hospital. A site has been presented to the county in the town of Providence and the work of clearing the site and cutting timber has already been completed.——The Open Air Camp Committee of the Niagara Falls Tuberculosis Association has selected a site for the proposed day and night camp for tuberculosis on Park Avenue near the city line and the river.

New York City

Hospital to Build.—The Bronx Hospital has purchased a lot 127x105 feet facing Crotona Park, on which an eight-story hospital building will be erected at an estimated cost of $300,000. The hospital dispensary treated more than 30,000 patients last year.

East Side Baby Contest.—The baby contest held at First Avenue and Ninety-First Street on July 26 brought out 3,000 spectators and 100 babies were entered. The contest was considered such a success that it was decided to have one every Saturday for the remainder of the season.

Off for Europe.—Among those who have sailed for Europe recently are Dr. and Mrs. George Emerson Brewer, Dr. Lewis Frissel, Dr. Hugo Lange, Dr. and Mrs. William J. O'Brien, Dr. and Mrs. Calvin Thayer Adams, Dr. and Mrs. E. B. Zabriskie, Dr. and Mrs. A. D. Chaffee, Dr. and Mrs. J. M. Vancott of Brooklyn, Dr. and Mrs. E. W. Peet and Dr. Francis J. Murray.

Hospital May Close.—It has been announced that the Rockaway Beach Hospital may be compelled to close its doors for want of funds. The hospital is in debt to the amount of $40,000 and has no funds with which to meet its obligations. The hospital is non-sectarian and is crowded at the present time. A house-to-house canvass is being made in the interest of the institution.

Safety Lessons for Children.—Hitherto the instruction given children as to how to avoid street accidents has been mostly by talks and pictures, but the American Museum of Safety is now conducting a safety campaign in vacation schools and recreation centers in Brooklyn where the instruction includes an object lesson to each child in safety. The pupils are taught the correct way to board and alight from a trolley car and how to cross a street in the safest way. Girls are taught how to get on and off a car with a doll or bundle in one arm.

Personal.—Dr. Attillo Caccini has been ordered to report to the Italian Foreign Office in Rome with a view to his representing Italy on the international commission which has in charge the sanitation of the city of Jerusalem. Dr. Caccini sailed for Europe July 30.——Dr. Charles Brush, ambulance surgeon of St. Vincent's Hospital, New Brighton, S. I., suffered a fracture of the arm and lacerations of the face and scalp in a collision between the ambulance and a trolley car, July 30.——Dr. Charles Hermann Reinsberg was stricken with heart disease while on a surface car recently and was taken to the Knickerbocker Hospital where it was said that his condition was precarious.

The City to Sell Ice.—New York is about to take its second step in paternalism. The first step was that of maintaining twenty-nine milk stations where milk can be bought at cost price and now in connection with these stations ice will be sold at cost. The city is preparing to establish an ice plant. It is planned to use the exhaust steam beneath the Hall of Records for the purpose of running the machinery for manufacturing ice. The estimates furnished show that ice can be produced by the city at a cost of $2.50 per ton, for which, under the present conditions, the consumer pays eight or nine dollars a ton. It is believed that by bringing ice within the reach of tenement dwellers the public health during the heated season will be greatly benefited.

NORTH CAROLINA

New Bulletin.—The Fourth District Medical Society of the State of North Carolina has commenced the publication of a monthly bulletin in charge of Dr. William H. Smith, Goldsboro, president, and Dr. Michael M. Saliba, Wilson, secretary of the organization.

Personal.—Dr. W. I. Royster, Raleigh, sustained serious injuries by being knocked down by an automobile recently.——Dr. Wade H. Brown, professor of pathology in the University of North Carolina, Chapel Hill, has resigned, to accept service with the Rockefeller Institute of Medical Research, New York City, and has been succeeded by Dr. James A. Bullitt, late of the University of Mississippi.

OHIO

Plan Enlargement of District.—The trustees of the Lima District Tuberculosis Hospital which includes Allen, Mercer, Auglaize, Shelby and Van Wert counties reports that the district shall be enlarged by the addition of Hardin, Hancock, Logan, Putnam or Paulding county, under the amendment passed by the last legislature, allowing ten counties to a district.

Personal.—Dr. John R. Johnson, Lima, has succeeded Dr. John W. Costolo as superintendent of the Lima District Tuberculosis Hospital.——Dr. John W. Beebout, Dexter City, was seriously injured and may lose the sight of both eyes as the result of an explosion of a bottle of chloroform, August 6.——Dr. M. E. Coy, Dayton, who was operated on for appendicitis July 29, is reported to be convalescent.——Dr. John S. Pyle, Toledo, has gone abroad.——Dr. Sherman McKenney, assistant physician at the State Penitentiary, has resigned and will locate in Levering.——Dr. W. H. Burns, health officer of Beliance, is reported to be seriously ill with septicemia, due to an infected wound.

PENNSYLVANIA

New Officers.—Fifth Censorial District Medical Society at York, July 24: president, Dr. George E. Holtzapple; secretary-treasurer, Dr. Charles W. Eisenhower, both of York.

The White Haven Sanatorium Association has the task of raising for the current fiscal year $25,000 needed for free beds for consumptives too sick to leave Philadelphia and too poor to be cared for at home; and to help pay board of patients at White Haven.

Assistants in Labor Department.—On August 6, Commissioner of Labor and Industry, J. P. Jackson, announced the appointment of Dr. John C. Price, of Scranton, as chief medical inspector of the new department. Dr. Walter H. Blakeslee of Philadelphia is also appointed to the work of medical inspection, pending the further organization of the department.

Personal.—Dr. Daniel S. Rice is reported to be ill at his home in Hastings.——Dr. Charles B. Reitz, Rochester, N. Y., has been elected pathologist at the Rittersville State Hospital.——Dr. Ralph C. Kell, physician of the department of the insane, Embreeville, has resigned.——Dr. C. B. Jones, Summerhill, who was seriously injured by an electric shock several weeks ago, is making slow progress toward recovery.

Philadelphia

No Pier Hospital for Consumptives.—Although every effort to find a suitable pier for the use of consumptives as a day camp has been made and $1,300 has been collected from charitable persons to aid in the work, the tuberculosis dispensaries of this city have been obliged to abandon the project for this summer and the money has been returned.

City to Enforce Garbage Rules.—A rigid investigation of the complaints of citizens of the inefficient collection of garbage, substantiated by fines of $1,766 imposed by the city on the company in the month of July will be made by the chief of the Highway Bureau. A campaign has also been started against householders who have not provided metal lids for garbage cans.

Eye Dispensary Branch to be Opened in School.—A branch of the Eye Dispensary of the Department of Public Health and Charities for the examination and treatment of the eyes of school children has been established at the Southwark School at Ninth and Mifflin streets, and will be in operation when the schools open in the fall. Dr. William J. Ryan has volunteered to do the work.

Child Hygiene Association Seeks Charter.—Application has been made for a charter for the Child Hygiene Association, under the name of the Child Federation. It is the intention of physicians who are directing the work, to extend it throughout the city, forming branches in various localities under the control of a central organization. The main object will be to reduce infant mortality through educational propaganda, to take the form of neighborhood shows, demonstrations and meetings.

GENERAL

Godlee Will Confer Degrees.—Sir Rickman Godlee, president of the Royal College of Surgeons, has accepted the invitation to confer the fellowships of the American College of Surgeons at the first convocation of the institution which is to be held in Chicago, November 13. At this time it is stated that more than twelve hundred surgeons of the United States and Canada will receive fellowships.

Personal.—The University of Michigan conferred on Surgeon-General Rupert Blue, U. S. P. H. S., the degree of Doctor of Public Health at its recent commencement—— The position of associate professor of surgery in the Medical Department of the University of the Philippines formerly held by Dr. John R. McDill, who, as already announced, has returned to the United States, has been filled by the appointment of Dr. George G. Davis, Chicago, who has taken the place for one year.

Congress on School Hygiene.—The formal program of the Fourth International Congress on School Hygiene will open in Buffalo August 25. On the preceding day, Sunday, the pulpits of the Buffalo churches will be occupied by distinguished speakers who are delegates to the congress. Much popular interest has been manifested in the coming congress, and an array of over three hundred speakers has been provided, who will speak or read papers on every conceivable subject relating to the hygiene of school life and closely allied subjects. Abundant provision has been made by the people of Buffalo for perfect arrangements for the congress and for the entertainment of delegates, guests and visitors to the meeting. The opening meeting, August 25, is to be held at Elmwood Music Hall at 10:30 a. m. and the regular sessions at the City Hall at 9 a. m. and 2 p. m. daily, and evening sessions at 8 at Elmwood Music Hall. Registration headquarters will be at the Hotel Iroquois, and the scientific and commercial exhibits in the Auditorium on Broadway. This is one of the most important international congresses of recent years and a large attendance is expected.

FOREIGN

Quadricentennial of Eustachius.—The town of Sanseverino in Italy invites the members of the profession to a celebration in honor of the quadricentenary of Bartolomeo Eustachio, the Italian anatomist of the sixteenth century. A marble tablet will be unveiled and the occasion celebrated with a scientific regional medical congress, September 6-25.

Honors to Prevost.—Prof. J. L. Prevost of Geneva was given an ovation recently on the occasion of his reaching the time limit of age and giving up the chair of physiology which he has so long filled. Delegates from medical societies and universities were present from France, Italy and other countries, and several decorations and degrees were conferred on him. He was one of the founders of the *Revue Médicale de la Suisse Romande*, now in its thirty-third year, and has been constantly on the editorial staff.

CANADA

Public Health Association to Meet.—The third annual meeting of the Canadian Public Health Association will be held in Regina, Sask., September 18-20, under the presidency of Dr. John W. S. McCullough, Toronto.

New Hospital.—The Provincial Royal Jubilee Hospital, Victoria, expects to construct a $400,000 hospital building to take place of the present building which accommodates one hundred and fifty patients. Competitive prices have been offered for the construction of plans.

Personal. — Dr. Helen MacMurchy, Toronto, has been appointed assistant inspector of hospitals and public charities in Ontario, and will have special supervision over the feeble-minded.——Dr. Chas. J. Hastings, M.O.H., Toronto, has been elected president of the Ontario Health Officers' Association.——Dr. James Algernon Temple, formerly dean of Trinity Medical College, and for many years a prominent teacher of obstetrics and gynecology in the University of Toronto, has been honored with the degree of LL.D. by his alma mater, McGill University.——Dr. John Stewart, Halifax, N. S., has gone to Edinburgh to receive the honorary degree of Doctor of Laws.——Dr. Walter Bapty, Victoria, has been appointed inspector of hospitals for British Columbia.——Dr. N. E. McKay has resigned from the chair of surgery in Dalhousie University, Halifax, N. S.——Dr. A. C. Sinclair, Vancouver, has been appointed superintendent of the Winnipeg General Hospital.

Opening of New Toronto General Hospital.—On June 19, the new Toronto General Hospital was opened with appropriate ceremonies by the Lieutenant-Governor, Sir John Gibson, Mr. J. W. Flavelle, chairman of the Board of Trustees, occupying the chair. Mr. Flavelle sketched the history of the hospital from the year 1818. The old building on Gerrard Street, which has been occupied for seventy years is abandoned and now offered for sale. To make possible the new institution, an out-patient department, costing $100,000, was contributed by Mr. Cawthra Mulock; the Massey Estate contributed a similar sum; Senator George A. Cox and his family contributed the nurses' home; Mr. J. C. Eaton, the surgical wing, costing over $300,000, and a further recent subscription of $50,000; the Misses Shields, $140,000 for the Emergency Hospital; the Ontario Government, $300,000 on behalf of the University of Toronto for the Pathologic Department; the city of Toronto, $200,000; numerous smaller private contributions. Just prior to the opening the city gave an additional $210,000 and private subscriptions were secured amounting to $300,000, leaving a balance of the total of $3,000,000 yet to be secured, of $300,000. In the out-patient department it will be possible to treat 600 patients a day. Six wards in the surgical building will accommodate 120 patients; there is a similar arrangement in the medical wing. In the administration building there are thirty-six beds for semi-public patients on the main floor; on the second are public wards for forty-four patients for eye, ear, nose and throat cases; on the third floor are forty beds for gynecological cases; on the top floor, intern quarters, to be used for private patients until the separate private patients' building is completed. The medical wing has in addition thirty-six beds for purposes of classification, also a large hall for demonstration purposes. On each of the three floors of the surgical wing are complete operating suites. Apart from the main building and behind the surgical wing is the Nurses' Home, in every respect designed for the comfort of the occupants. In connection with this there are gardens and a tennis court. The Private Patients' building and Obstetrical buildings will not be ready until the fall. There is a separate building to house the servants. In every department is to be found the most modern equipment. Wide verandas and roof-gardens are conspicuous features. The buildings are so arranged that the grounds are inclosed on all sides. The vital center is in the southeast corner. Here is the power plant. All heat, artificial light and power emanates from this center.

LONDON LETTER

(From Our Regular Correspondent)

London, July 26, 1913.

The Annual Meeting of the British Medical Association

The eighty-first annual meeting of the British Medical Association was opened at Brighton on July 22. As usual, it was preceded by the annual representative meeting which began on July 18. The important question of the reorganization of the association, which has been brought to a head by the insurance act, was discussed. At first formed for scientific purposes and to deal with the relation between physicians and their patients, the association is now confronted with a third party—the state—which is interfering more and more in medical matters. The defeat of the association in the struggle with the government over the insurance act has shown that the machinery of the association is antiquated. The proposal, mentioned in previous letters to The Journal, to transform the association into a trades union, was brought forward. This would enable the association to accomplish the following, which at present are beyond its powers: (1) benevolent provision for members and their families; (2) promotion of candidature for any British legislative assembly; (3) taking or defending legal proceedings on behalf of members involved in their professional capacity; (4) sale or transference of practices; (5) the provision of a fund for the support of physicians affected by actions undertaken by the association. A keen debate took place in which it was urged against the motion to form a trades union that a strike, which is the principal weapon of the unions, was impossible in the medical profession and that what was required for success was union of the profession, which did not exist at present and without which a trades union could not succeed. Moreover the intimidation on which the success of trades unions depends was considered objectionable. The motion was defeated by 11,408 to 5,259 votes. Another matter discussed was a proposal made in Parliament to give friendly societies control again over physicians. It may be remembered that the abolition of such control was one of "the six points" demanded by the association on the introduction of the insurance act and was conceded by the government. Friendly societies are now complaining that, in consequence of malingering, excessive demands are being made on their funds. They attribute this to the fact that physicians give certificates of incapacity for work too easily since they have ceased to be in the employ of societies. A strong protest against the proposal, which it was declared would be a breach of faith between Parliament and the medical profession, was carried unanimously. The government having introduced an amending act to the insurance act a number of amendments which had been drafted for the purpose of being brought before Parliament were adopted. They were as follows: 1. A charge to be made for night calls by insured persons. 2. An insured person shall not be entitled to require medical attendance from any physician other than the one on whose list he is, as for instance, for the administration of a general anesthetic. 3. An insured person shall not be entitled to medical attendance for any disease or disablement caused by his own conduct other than venereal disease. At first it was intended not to make an exception of venereal disease, but it was pointed out that its early and efficient treatment was desirable in the interest of the patient, the public and the physician. It was most undesirable that the patient should go to the pharmacist or the quack for treatment. 4. Medical benefit shall not include any right to treatment of miscarriage or abortion or any condition arising from and within twenty-eight days after it. It was decided to raise the subscription of members to the association from the present sum of $6 to $10.50. It was pointed out that the association had been hindered by lack of funds in its contest with the government and that as the result of the extra expenses in connection with holding of meetings and organizing against the insurance act the association had a deficit of $44,000 in 1912 and that there was an estimated deficit of $28,000 in 1913.

THE PRESIDENT'S ADDRESS

The president, Dr. W. Ainslie Hollis, delivered an interesting address on "The Medical History of Brighton and the Neighborhood." He traced the history of this most fashionable of health resorts from prehistoric times. Formerly a fishing village, it was "discovered" in the eighteenth century by Dr. Richard Russell, physician to St. Thomas' Hospital, who called attention to the value of sea water in a work published in Latin and entitled "Dissertatio de sabe glandulari et de usu aquae marinae in morbis glandularum." He resided in Brighton during the season and attracted a fashionable clientele. With the advent of the nineteenth century Brighton became the happy hunting ground of quacks. One Nathan Smith invented an air pump for "the extraction of the gout." Perhaps this may be regarded as a crude anticipation of Bier's treatment During the first quarter of the nineteenth century dispensaries, sea-bathing infirmaries and hospitals were founded for the relief of the sick poor people.

THE ADDRESS IN MEDICINE

The address in medicine was delivered by Prof. George Murray, whose pioneer work in connection with the thyroid gland is so well known, on "Some Aspects of Internal Secretion in Disease." He pointed out that while typical cases of myxedema are striking, slight and early cases are easily overlooked. It was he who discovered the thyroid treatment of myxedema. He mentioned the interesting fact that his first patient is alive and well after twenty-two years, a condition of health being maintained by a dose of 10 mm. liquid thyroid extract weekly. He briefly discussed the functions of the ductless glands. The dual function of the generative glands could be separated experimentally. In the testicle the internal secretion was probably furnished by the interstitial cells. Ligature of the spermatic cord, like castration, caused arrest of development of the sexual characters but ligature of the vasa deferentia did not. Similarly, Roentgen rays arrested spermatogenesis without arresting internal secretion. He held out the hope that with advance of our knowledge of internal secretions the treatment of melasma suprarenale and hyperthyroidism and acromegalia will prove more successful.

THE ADDRESS IN SURGERY

The address in surgery was delivered by Sir Berkeley Moynihan, who took for his subject "The Gifts of Surgery to Medicine." He said that surgery in recent years had proved a powerful helpmeet, not only in the elucidation of the problems of internal medicine, but by reason of the light it had brought to bear on the functions of many of the organs of the body. The chief glory of the surgeon came from the dedication of his powers to the individual, but there was a cause also to be served. In every operation something might be learned, not only of the disorders which called urgently for relief, but of other associated or, possibly, separate conditions which chanced at the same moment to be present. Clinical research when sedulously conducted and illumined by the disclosures made on the operating table afforded the most accurate of all methods of investigation in the diseases of man.

A NATIONAL SYSTEM OF HOSPITALS

In the section of medical sociology, Professor Moore, professor of biochemistry in the University of Liverpool, opened a discussion on "Hospitals in Relation to the State, the Public and the Medical Profession." He characterized the present system as inadequate in some directions, wasteful and overlapping in others. A reformer who attempted to show how the present muddle might be mended was met with the cry that the glorious example of charity and voluntary effort must not be weakened. They already saw the beginning of a new movement in the applications made to the municipal authorities for assistance from the rates in aid of the voluntary hospitals. A similar indication was the grants from the state made to the medical schools for the education of students. The insurance act would rapidly produce an increased rate of approach toward a national system of hospitals. The old conception of the hospital as a place for the relief and palliation of disease must be replaced by the scientific realization of the hospital as the pulsating life-center of a little corps, charged with the execution of an important task, the maintenance of the highest degree of health in a given district and correlated to similar corps or units all over the country.

NON-DIABETIC GLYCOSURIA

In the section of medicine, Dr. A. E. Garrod opened a discussion on "Non-Diabetic Glycosuria." He said it was impossible to draw any sharp line of demarcation between diabetic and non-diabetic glycosuria. Diabetes was held to involve several distinct ideas—persistence of glycosuria throughout the remainder of life, fatality and a group of symptoms, such as polyuria, thirst, wasting and local lesions (boils, cataract and gangrene) and lastly, a profound disturbance of carbohydrate metabolism. Not one of these conceptions provided a satisfactory basis for a definition. They had no right to assume that recovery could not occur. A diabetic patient might exhibit for a long period none of the associated symptoms mentioned. Nor did diabetes due to definite visceral lesion differ in any essential from that for which there was no explanation. Lastly, if the criterion was taken to be failure to dispose of glucose in the normal way with the result that it accumulated in the blood and was excreted in the urine, very few varieties of glycosuria could be excluded from the diabetic group. The progress of research tends to show that an internal secretion of the pancreas is the dominant, if not the sole, controller of carbohydrate metabolism and that with few exceptions all varieties of glycosuria were of pancreatic origin. Although often no signs of disease could be found in the pancreas it was probable that its internal secretion was subject to control by influences working from a distance or emanating from other internal secretions.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, July 25, 1913.

Hygienic Questions Involved in Using the Water of Lake Geneva to Increase the Water-Supply of Paris

The municipality of Paris is considering the means of increasing its insufficient supply of drinking-water. Out of four plans presented, only two are capable of furnishing a million cubic meters per day, and these alone could be considered. One is to bring the water *from* Lake Geneva, the other to bring it *from* the Loire Valley. It is calculated that the Lake Geneva project would cost about $160,000,000 (800,000,000 francs). To justify so great an expense, the water should be of unfailing purity. Studies made by the city of Paris show that although Lake Geneva is a perfect purifying basin in calm weather, under the action of winds and currents during storms in the autumn and winter seasons, the water rapidly becomes impure. Continuous filtration, therefore, must be provided for, and this is a very serious drawback to the plan. On this account the committee of the municipal council intends to recommend the adoption of the Loire Valley plan, which will cost less and will assure pure water, taken not from the river itself, but from its alluvia, filtered through sand. Other objections raised to the use of Lake Geneva water are that it has a slight tendency to produce goitre, and that neither filtration nor boiling could altogether check this tendency. Another danger is the risk of the introduction of the bothriocephalus, which at present is known in France only in the upper Savoy, but which is very frequent around Lake Geneva.

Enrolment in Army at the Age of Twenty

The physicians in the Senate and in the Chamber of Deputies recently met to discuss the question of enrolment in the army at the age of 20 and resolved by a vote of 25 against 5 that there were no reasons against enrolment at this age, provided that a rigorous medical examination were made at the time of recruiting the men, and that the hygienic conditions of actual service were rigidly respected, that the military education was not made too severe, that overcrowding of the barracks and hospitals be avoided, and that the clothing, food and other hygienic conditions of the soldier's life were improved. Against the advice of the superior consulting committee on military hygiene and epidemiology, and the decision of the army committee, the Chamber of Deputies adopted the age of 20 by a vote of 376 to 189.

Prizes of the Academy of Science

The Académie des sciences has awarded two Montyon prizes of $500 (2,500 francs) each, one to Mme. Lina Negri Luzani for her studies on the so-called Negri bodies, discovered by herself and her late husband in the nervous system of rabid animals; the other to Dr. L. Ambard for his "Memoir on the Renal Secretion."

The Barbier prize of $400 (2,000 francs) was shared between Drs. Jules and André Boeckel, on the one hand, for their work, "Fractures of the Cervical Spine without Medullary Symptoms," and Drs. Beurmann and Gougerot, on the other, for their volume on the sporotrichoses.

The Argut prize of $240 (1,200 francs), a new biennial prize, intended to recompense the person who made a discovery curing a disease which previously could be treated only by surgery, thereby increasing the scope of medicine, was awarded to Drs. Robert Crémieu and Claudius Regaud for their work concerning the effects of the Roentgen ray on the thymus and the treatment of the thymus by roentgenotherapy.

The Bréant prize of $20,000 (100,000 francs), intended for the discoverer of a cure for Asiatic cholera, was, of course, not awarded. Out of the interest on the fund, the academy awarded three prizes of $400 (2,000 francs), one to Dr. C. Levaditi for his work on acute epidemic poliomyelitis and acute infectious pemphigus; one to Drs. A. Netter and R. Debré for their work, "Cerebrospinal Meningitis," and one to Professor V. Babes for his treatise on rabies.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, July 18, 1913.

The Campaign against Typhoid in Southwestern Germany

Early in 1890, when cholera invaded Germany, it was shown that provision for an unobjectionable water-supply and removal of excreta is not sufficient for the prevention and suppression of the epidemic; it was found *necessary* to investigate each individual case. Typhoid and cholera possess much in common with reference to their *mode* of spread. Robert Koch first called attention to the fact that the only source and the most dangerous transmitter of the typhoid bacillus was an infected human being, and that it was of the greatest importance to discover those ill with typhoid and the healthy carriers by bacteriologic examination and to apply to them the necessary preventive measures.

These principles were first applied in the Prussian district, Trier, where typhoid had attained *remarkable* prevalence. After this experimental proceeding had shown good results, it was regarded as desirable to carry out the method of Koch in the campaign against typhoid on a more extensive scale. It had been shown that this disease had spread *to an* alarming extent and was very firmly established not only in the Prussian district mentioned *and* in the neighboring Bavarian district of the Palatinate, but also in the imperial provinces of lower Alsace *and* Lorraine and in the Oldenburg principality, Birkenfeld. In these districts, in 1902 and 1903, by the aid of an imperial appropriation and the contribution of national funds by the states immediately concerned, an energetic, systematic campaign against typhoid, according to instructions of Robert Koch, was instituted under the common auspices of the imperial government and the governments of Prussia, Bavaria and Oldenburg, as well as the provincial authorities of Alsace and Lorraine.

The number of bacteriologic laboratories already established in Trier and Saarbrücken, which were devoted to the antityphoid campaign in conjunction with the medical and government authorities, was increased by nine other institutions in the principal localities of the affected territory. In order to assure a uniform practice and a regular cooperation of these stations, there was appointed in November, 1904, with the assent of the provincial authorities concerned, an imperial commissioner for the campaign against typhoid in the southwest of the empire, and Saarbrücken was assigned to him as headquarters.

For the entire work of carrying out the organization, the empire, in the period from 1903-1912, expended about $443,750 (1,775,000 marks). The success of this extensive trial was equally satisfactory with the preliminary one. While in 1904 the number of typhoid cases in the entire area amounted to eleven per 10,000 inhabitants, it had fallen by a permanent reduction to 4.8 in 1911. That is a diminution of typhoid incidence of 56.4 per cent. That this reduction is not to be attributed to a general fall in the typhoid morbidity in Germany is shown by a comparison with the statistics of Prussia. In Prussia there were in 1904, 4.3 cases of typhoid per ten thousand inhabitants and this number has maintained itself with slight variation, and indeed in 1911 it was exactly the same. Of the numerous scientific results of this organization one of the most important was the realization of the importance of bacilli carriers who constantly eliminate the organisms.

It was first established by observation and study during the typhoid campaign in the southwest that more frequently than was previously assumed, apparently healthy people, who showed no symptoms of disease and according to their own statements have never suffered from typhoid, discharge typhoid bacilli occasionally or continuously and that both these forms of typhoid hosts, those persistently harboring and discharging virulent bacilli after recovery, and the healthy bacilli carriers, play a very dangerous rôle in the spread of typhoid. It was known that of every hundred typhoid patients from three to six continue to harbor typhoid bacilli. In addition, there are the bacilli carriers of whom it is not known that they were ever affected with the disease.

Up to the end of 1909, 501 typhoid bacilli carriers were discovered in the area under observation, that is 0.016 per cent. of the inhabitants of this district. Among these, not less than 71.9 per cent. were women. This marked participation of the female sex is probably due to the fact that among the typhoid hosts the principal location of the bacilli is the gall-bladder, and that for the same reason that women form the chief contingent of gall-bladder patients they also form a great majority of typhoid hosts.

By the discovery of typhoid hosts, an explanation has also been found for so-called typhoid houses and typhoid foci, that is, those places where almost every newcomer was immediately attacked with typhoid. It was the typhoid hosts who, as inhabitants of such houses, spread the infectious germs and as soon as the necessary preventive measures were taken with reference to these persons the occurrence of new infections was prevented. Unfortunately, no means has yet been discovered to free typhoid hosts permanently from their bacilli by medicinal means. In order to favor the solution of this question there has been offered a prize of $2,500 (10,000 marks) for an effective process, as I noted in my last letter.

Campaign against Antivaccinationists

On the bill-boards of a suburb of Berlin there was recently posted a large placard with the title "Vaccination, Disease, Death," which made a propaganda against vaccination and finally recommended the procuring of a pamphlet which had the title, "How Shall I Conduct Myself with Reference to the Demand for Vaccination?" The committee against quackery of the Berlin Aerztekammer (Medical Chamber) sent a communication to the communal authorities in which attention was directed to the very objectionable contents of the placard, and especially to the fact that by this placard and the pamphlet advertised in it the public was directly incited to disobedience to an imperial law. The communal authorities were requested to take action for removing the placard from the public placard columns. The town council immediately complied with this request and in a public statement asserted that the entire placard was suited to produce false ideas in the public mind.

Hospital for Mild Cases in Berlin

As the number of people entering the municipal hospitals is constantly growing and it is therefore to be feared that the existing hospitals will soon be insufficient, the city government of Berlin has proposed a plan for the relief of the existing hospitals by placing patients elsewhere whose condition requires care in a hospital but who are not so sick that they need the costly arrangements provided for the treatment of the severely sick.

The suitable treatment of tuberculous patients will be provided for by the establishment of an institution for the care of patients with laryngeal and pulmonary disease on the land belonging to the municipality of Berlin at Buch. In addition, an institution for convalescents and mild cases will be provided for by the remodeling of a building in the neighborhood of Berlin which was originally intended for other purposes. According to the statistics for one year, more than 18 per cent. of all the patients discharged from the municipal hospitals, amounting to about 9,500 persons who had received about 125,000 days of care, could have been treated much more cheaply in such an institution and have left vacant about 340 beds per day in the regular municipal hospitals. The city council has approved the plan of the city government and appropriated $7,500 (30,000 marks) as the first building fund. The institution to be established first will be only for men.

BUDAPEST LETTER

(From Our Occasional Correspondent)

Budapest, July 17, 1913.

Methyl Alcohol

Some few years ago the medical profession was alarmed by the report that rum produced blindness, and as a consequence the valuable and tried stimulant, tea, fell into disrepute here (in Hungary, tea is drunk with rum). After a time equally bad reports came of other brandies and liquors, the sight being affected in all cases. In some instances death followed, the lethal effects being found to follow the many compounds placed on the market to give the flavor of old brandies to raw cheap spirits. Examination having been made as to the source of poisoning, it was found by Professor Telletar that the toxic agent was methyl alcohol (wood alcohol) which is manufactured in Hungary in great quantities for industrial purposes. Since that time there have been several poisonings due to methyl alcohol, which would formerly have perplexed the doctor. It was found, for instance, that even the prolonged working with paints containing methyl alcohol may cause optic atrophy simply by the evaporation of the spirit. In a cabinet-making factory, where methyl alcohol is used almost continually, several workmen were found to suffer from incipient atrophy. The district medical health officer therefore ordered the factory doctor to examine the sight of all workmen every month and report the results to him. Dr. Doifi, chief medical inspector in Budapest, bought bottled liquors in some fifty brandy shops and investigated the specimens as to methyl alcohol content. He found this poisonous substance even in a few of the most expensive liquors. The Hungarian law prohibits the use of methyl alcohol in the preparation of foods, or any substances, medicines or otherwise, intended for internal use. It is hoped that the attention which Doifi's investigation called to the subject will result in a new legislative prohibition of its use in the industries too, or at least the testing of the sight of workmen at regular monthly intervals in industries in which methyl alcohol is indispensable.

Phosphorus Necrosis

On April 1 of this year a new law came into force which prohibits the use of phosphorus in the manufacture of matches. Since that date, new facts came to light which were kept secret as long as phosphorus could be used in this industry. Dr. Kovacs, chief physician of one of the largest sick clubs in the country, who has paid particular attention to the study of phosphorus necrosis, said in a recent lecture that almost all workmen in the factories suffered in a greater or less degree from poisoning. This he attributes to the fact that particularly among workmen, it is a great exception to find persons who are not suffering from caries of the teeth, which is the most common means of entrance for phosphorus. As to the causation of phosphorus necrosis, he found in his studies that the fumes of the lower oxid of phosphorus given off from the moist phosphorus paste, in the course of manufacturing matches, exercise a local influence. It is also clear, he said, that the possession of carious teeth is a necessary factor in exciting the acute local necrosis. He found, too, that the bone of a match-maker and a healthy bone show a distinct difference in the relative proportions of phosphoric acid to lime, and this also is observed in cases of "phossy jaw." By the aid of the Roentgen ray it can be demonstrated that bone formed in young people working at phosphorus processes during the growing period is much denser in character than it otherwise would be.

The Contagiousness of Alopecia Areata

Dr. Coillag, dermatologist at the St. Stephan Hospital in Budapest, has devoted several years' study to the decision of the question, "Is alopecia areata contagious, or can it be?" In a recent lecture he resumed the results of his studies, and said that it is a decided fact that alopecia areata may become contagious. He has seen several epidemics in regiments and schools. The obvious conclusion is that the divergence of opinion in this matter arises from the observations of the various investigators, bearing on diseases similar in clinical appearance, but differing in their pathologic cause. Coillag holds that the weight of opinion at present appears to be in favor of a certain degree of contagiousness, but it is conceded to be unnecessary to insist on the same stringent precautions as in the case of ringworm. It is sufficient in a general way to keep the infected areas covered with a dressing of some sort, and to avoid the promiscuous use of brushes, towels, etc. It is important that this view should be made generally known.

Marriages

Douglas Archer Lehman, M.D., Harrisburg, Ill., to Miss Hazelle Lane of McLeansboro, Ill., June 18.

Lois Boyd, M.D., Rock Hill, S. C., and Harry Goodwin Gaw at Stuart's Draft, Va., August 14.

Lyman Gould, M.D., Chicago, to Miss Marion Cooper of Kendallville, Ind., at Albion, Ind., August 1.

Joseph Mickler, M.D., Hudson, Fla., to Miss Robie Beta Green of Chattanooga, Tenn., July 30.

Chester Arthur Black, M.D., to Miss Marguerite Thompson, both of Lima, Ohio, at Put-in-Bay, August 4.

Deaths

Thomas Croggan Smith, M.D. Georgetown University, Washington, D. C., 1864; a fellow of the American Medical Association; for more than fifty years a practitioner of Washington; surgeon of volunteers during the Civil War; once president and for thirty-five years corresponding secretary of the District of Columbia Medical Society; president of the Washington Obstetrical and Gynecological Society from 1897-99; consulting obstetrician to Freedman's Hospital; a trustee of Dickinson College, Carlisle, Pa., and president of the board of trustees of the Methodist Home for the Aged; died at his home in Washington, July 23, from acute gastritis, aged 70.

Oliver Brewster Taylor, M.D. Harvard Medical College, 1842; believed to be the oldest graduate of that institution; for many years a practitioner of Manchester and Manchester Green, Conn.; for more than fifty years a member of the school board of Manchester and for twenty years its secretary; died at the home of his son in Hartford, July 26, aged 93.

Joseph Kirby Corson, M.D. University of Pennsylvania, Philadelphia, 1863; major Medical Corps, U. S. Army, retired; one of the recipients of the Medal of Honor; a veteran of the Civil War; a member of the Medical Society of the State of Pennsylvania; since his retirement a resident of Plymouth Meeting, Pa.; died at his home in that place, July 24, aged 76.

John W. McPherson, M.D. Baltimore (Md.) Medical College, 1898; a member of the Medical Society of the State of North Carolina; a specialist in diseases of the eye, ear, nose and throat; of Haw River; aged 40; while despondent over family troubles, committed suicide July 27, at his father's home in Liberty, N. C., by cutting his throat with a razor.

William B. Cubbage, M.D. Starling Medical College, Columbus, Ohio, 1882; for more than forty years a practitioner of Saginaw County, Mich., and the first school commissioner of that county, serving for several terms; professor of materia medica in Saginaw Valley Medical College; died at his home in Freeland, July 31, from nephritis, aged 65.

Louis Peiser, M.D. University of Erlangen, Germany, 1886; a fellow of the American Medical Association and chief of the medical staff of the German Hospital, New York City; on whom the Emperor of Germany recently bestowed the Order of the Red Eagle; died suddenly in Carlsbad, Germany, August 5, from arteriosclerosis, aged 55.

Benjamin F. Jones, M.D. University of Louisville, Ky., 1887; a fellow of the American Medical Association and once president of the Eastland County (Tex.) Medical Society; for four years health officer of Cisco and local surgeon of the Missouri, Kansas and Texas Railway; died at his home, May 21, aged 56.

Charles Benjamin Heinzman, M.D. Rush Medical College, 1890; a member of the Illinois State Medical Society; of Metamora, Ill.; who was injured July 24 near Malcom, Iowa, by the overturning of his automobile; died at Mercy Hospital, Des Moines, July 31, aged 48.

Joseph Ingels, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; a member of the Kansas Medical Society; for thirty-nine years a practitioner of Pawnee County; died at his home in Larned, July 27, from cerebral hemorrhage, aged 64.

William H. McLenathan, M.D. New York Homeopathic Medical College, New York City, 1878; for many years a practitioner of the eastern district of Brooklyn; died at his summer home, Scragswood Camp, Willsboro, N. Y., July 30, aged 71.

James Henry Murray, M.D. Baltimore Medical College, 1912; of West River, Md.; intern at the Baltimore Municipal Tuberculosis Hospital and later junior intern in St. Luke's Hospital, Jacksonville, Fla.; died in that institution, July 24, from peritonitis, due to intestinal obstruction and following an attack of diphtheria, aged 25.

Frank M. Singer, M.D. Detroit College of Medicine, [illegible]; of Detroit; a member of the Michigan State Medical Society; aged 32; died in St. Mary's Hospital, Detroit, July 27, from injuries received that day in a grade-crossing accident in which his automobile was run into by a passenger train in the outskirts of Detroit.

Charles Henry Jernigan, M.D. Jefferson Medical College, Philadelphia, 1855; a member and once president of the Medical Association of the State of Alabama; a surgeon in the Confederate service throughout the Civil War; since 1886 a practitioner of Birmingham; died at his home in that city, July 28, aged 84.

George P. Hodson, M.D. Medical College of Evansville, Ind., 1876; a member of the Indiana State Medical Association and a member of the staff of Deaconess Hospital, Evansville; for twenty-five years associated in practice with Dr. Edwin Walker; died in the Gilbert Sanitarium, Evansville, July [illegible], aged 60.

William D. Straughn, M.D. Jefferson Medical College, [illegible]; a member of the Medical and Chirurgical Faculty of Maryland; a trustee of the Snow Hill High School; school examiner for three years and physician to the poor; died suddenly at his home in Snow Hill, July 30, from heart disease, aged 49.

Theodore Saulsbury, M.D. College of Physicians and Surgeons, Baltimore, 1875; for more than thirty years a practitioner of Burrsville, Md.; representative from Caroline County in the Maryland Legislature in 1908; died in the Delaware State Hospital, Farnhurst, July 21, aged 65.

Harlon Justin Morrill, M.D. College of Physicians and Surgeons, Chicago, 1902; of Chicago; was found dead in a rooming house in Cicero, August 4, aged 45. The coroner's jury returned a verdict of suicide from narcotic poison, while despondent on account of the death of his wife.

Alden Hebbard Wight, M.D. University of Michigan, Ann Arbor, 1870; formerly of New Hampton, Iowa, and for two terms recorder of deeds of Chickasaw County; a veteran of the Civil War; died at his home in Hermiston, Ore., about July 28, from cerebral hemorrhage, aged 70.

Anthony Seidler (license, Indiana, 1897); a resident of Dyer, Ind., for forty-six years; formerly coroner of Lake County and justice of the peace for more than thirty years; a surgeon of volunteers during the Civil War; died at his home, July 27, aged 87.

Edwin Forrest Farrow, M.D. College of Physicians and Surgeons, New York, 1866; died at his home in Peapack, N. J., June 21, from pneumonia, aged 51.

Anthony H. Worthington, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1860; died recently at his home in Trenton, N. J.

Edgar James Powers, M.D. Castleton (Vt.) Medical College, 1850; died at his home in Franklin, Vt., June 25, from senile debility, aged 85.

Zephrim Rouleau, M.D. Victoria College, Coburg, Ont., 1872; died at his home in Manteno, Ill., July 17, from angina pectoris, aged 66.

Edwin Augustine Kemp, M.D. University of Vermont, Burlington, 1862; died at his home in Lonsdale, R. I., June 12, aged 80.

John H. Cook, M.D. University of Alabama, Mobile, 1878; of Laurel, Miss.; died in an infirmary in Mobile, July 18, aged 60.

Charles G. Combs, M.D. New York University, New York City, 1888; died at his home in Rochester, N. Y., July 17, aged 53.

John Warren, M.D., New York City, advises us that the death notice which appeared in The Journal of August 2 is incorrect and that the individual who died was Dr. John Sidney Warren of New York City.

Edward Cooney, M.D., Appleton, Wis., asks that it be announced that he is not the Dr. Edward Cooney whose death was announced in The Journal of August 9 to have occurred in Brooklyn, N. Y.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

EVICTING MEDICAL FAKERS

How San Antonio Rid Itself of Fraudulent Medical Practitioners *

Many communities are afflicted with medical fakers because no one takes the initiative in suppressing frauds of this character. Members of the medical profession are sometimes loath to do so because of the belief that the public will misconstrue their motives. In most instances the civil authorities have been indifferent. And so these frauds flourish.

San Antonio, possibly because of its reputation as a health resort, has been a fertile field for medical frauds of all sorts, but through the action of the Bexar County Medical Society has been almost completely rid of such people. Texas has a medical practice law which differs little from the practice laws of many other states, but under the vigorous action of the legislative committee of the county society headed by Dr. Charles D. Dixon, chairman, assisted by their attorney, Mr. J. I. Kercheville, regularly employed by the committee, practically all of these people have been driven out of the community. Only three firms of advertising specialists remain, and against the men composing these firms charges have been filed for the revocation of their licenses.

The procedure adopted was, first, to procure from the records of the district clerk's office the names of all registered physicians of the county. These names were printed in a pamphlet and one mailed to each member of the county society with a letter asking him to carry the list with him and to report the names of all unregistered practitioners to the chairman of the committee. Each case of these illegal practitioners, including those who advertised in the extravagant manner usual to such individuals, was taken up and investigated. A patient would be sent to them and in this way evidence secured against them. An affidavit was then filed in the criminal court, the persons arrested and the case set for trial, which seems to be a method of procedure provided in Texas without having a preliminary hearing and obtaining the usual grand-jury indictment. The cases were then tried and in all but two or three instances convictions were obtained. The prosecutions for violation of the postal laws were, of course, brought in the federal court.

This work was approved by the courts and by the citizens generally. It is, of course, the interest of the people which is best served by such action, but they do not always so understand it and it is gratifying in this instance to note that the work of the physicians of Bexar County had the hearty approval of the public.

The list of prosecutions, a statement of each of which is given herewith, shows how sorely San Antonio and Bexar County were afflicted with medical frauds of great variety. The list, with the other information contained in this article, was furnished by Dr. Charles D. Dixon from the court records and from his own files as chairman of the legislative committee of the Bexar County Medical Society.

PROSECUTIONS UNDER THE TEXAS MEDICAL PRACTICE LAW

Philicarpa Reuda came to San Antonio from Mexico and began practicing medicine without registering his license. He was arrested, June 5, 1912. At the trial, July 15, 1912, he pleaded guilty and was given a fine of $50 and one hour in jail.

J. Martin, a Mexican, was arrested, May 15, 1912, for selling medicine on the street and recommending it to cure any kind of disease. On Sept. 11, 1912, when his case was called, it was found that he had left the country, forfeiting his bond.

"Mrs. Dr." A. B. McCanna, who called herself an "Electro-Therapeutist" and claimed to have an electrical battery made in France after her own invention, which would cure all diseases, even tuberculosis in the last stages, was arrested, June 13, 1912. When her case was called, Sept. 13, 1912, it was found that she had left, and her bondsmen were compelled to pay the bond.

George H. Carr advertised "Carr's Sun Cure," which was guaranteed to cure when all other remedies had failed. He was arrested, July 17, 1912, and convicted Sept. 21, 1912, getting a fine of $50 and thirty days in jail. Carr testified on the witness stand that if one would take his medicine according to directions he would never die.

George Washington White conducted a sanatorium, treating tuberculosis with an inhaler of his own invention, using herbs which he claimed came from Madagascar. After some correspondence with White, a woman detective with a young man as witness went to White, who told her she had five cavities in her lungs; he guaranteed to cure her for $75. A partial payment was made and on Oct. 14, 1912, he was arrested and tried and convicted, Dec. 21, 1912. He was fined $500 and given ninety days in jail. He appealed the case to the Court of Criminal Appeals, but in April, 1913, the verdict of the lower court was affirmed.

W. N. Norwood conducted a hospital for tuberculosis, treating his patients by having them inhale smoke from ordinary oak wood. He had a pit arranged in his yard in which he burned the wood, and the smoke was conducted through a flue to a box in his office from which the patient breathed the smoke. He guaranteed to cure any case of tuberculosis. He was arrested, Oct. 4, 1912, tried before a jury and convicted, Feb. 18, 1913. He was required to pay a fine of $200 and to spend thirty days in the county jail. An appeal is still pending.

"Dr." F. Pierce, an old negro, called himself an "Indian Doctor," making and prescribing his own medicine. He was arrested, Sept. 30, 1912, for practicing medicine without a license and pleaded guilty, Feb. 19, 1913. He was fined $50 and given one hour in jail.

W. L. Dorn, a negro "magnetic healer," was arrested, Feb. 4, 1913, and pleaded guilty, April 24, 1913. He had no license. He was fined $50 and given one hour in jail.

Dr. I. Mendez, a "magnetic healer," was arrested, Feb. 4, 1913, for practicing medicine without a license. He pleaded guilty, May 7, 1913, and was fined $50 and given one hour in jail.

Dr. Thomas T. Woody practiced medicine under an assumed name, his license being registered under the name of C. D. Anderson. He was arrested, April 21, 1913, and convicted, May 7, 1913. He was given a fine of $50 and one hour in jail.

"Prof." A. F. Haslem advertised a preparation under the name of "Mrs. Black's Compound" for all irregularities of women. Letters directed to him requesting medicine and directions for producing a miscarriage were promptly answered, supposedly giving the desired information. A woman was also sent to see him. He examined her by looking into her eyes through a magnifying glass, telling her that she was pregnant. He prescribed remedies to produce abortion. He was arrested, Nov. 15, 1912, for violating the postal laws, convicted, May 20, 1913, and sentenced to eighteen months in the United States prison at Fort Leavenworth, Kan.

"Mrs. Dr." Susanna Norton used the United States mail for sending medicine to produce abortion. She was arrested, Nov. 15, 1912, and convicted, Jan. 8, 1913. She was fined $250 and her license to practice midwifery was revoked.

Dr. J. Harvey Moore defined himself as an "eye specialist" and was known as the "Oscillator Man." On account of an operation on a patient's eye, a suit for malpractice and personal damages was filed against him, Sept. 25, 1912. The trial, Dec. 18, 1912, resulted in damages of $3,202. In order to avoid payment of the judgment Dr. Moore disappeared without leaving his address.

Dr. A. G. Dellenbaugh was arrested, Sept. 30, 1912, for practicing medicine without a license. He pleaded guilty, May 7, 1913, and was fined $50 and given one hour in jail.

Fred Wegley was arrested, Nov. 2, 1912, for selling a fake preparation known as "Lopez' Remedy," which he recommended for the cure of various diseases. He pleaded guilty, May 7, 1913, and was fined $50 and given one hour in jail.

"Dr." C. M. Brondo, a Mexican woman, had secured from her druggist a list of prescriptions supposed to be for various diseases. When a patient called on her she would have the patient make his own diagnosis and she would give the prescription for the trouble named. She was arrested, Oct.

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* The above article also appears in a pamphlet entitled "Quacks, Itinerant and Otherwise." Price 4 cents.

15, 1912, for practicing medicine without a license, and convicted, Dec. 19, 1912, being fined $50 and given one hour in jail.

J. N. Stone, a "chiropractic" masseur, was arrested, March 12, 1913, for practicing medicine without a license. His case has not yet been tried.

Drs. J. H. Terrill and H. E. Truax ran an institute for many years in San Antonio called the Terrill Medical Institute, its patronage being secured, it is said, by disgraceful advertising. A suit for malpractice and personal damages on two charges was filed, Jan. 8, 1913, and May 1, 1913. A judgment of $500 was rendered against them. Terrill then retired from the institute, which is still being run by H. E. Truax.

Drs. T. M. Stotts and S. V. Young advertised as the "German-American Doctors." A bottle containing salt and water colored with tincture of iron was taken by a supposed patient to the "German-American Doctors" with the statement that he was having trouble with his kidneys. After an alleged examination of the specimen, they told him he was suffering with Bright's disease and that he was full of urates and uric acid. They guaranteed a cure for $75. Suit for revocation of license was brought, April 30, 1913, and is still pending.

Dr. George H. LeRoux conducted a "college," advertising to graduate pupils in osteopathy in ten days, giving them a diploma guaranteed to give them the right to practice medicine anywhere in Texas. Action was begun in the federal court, July 26, 1912, for using the United States mails to defraud, when the so-called institution was closed and Dr. LeRoux departed suddenly for California, Aug. 1, 1912.

"Mrs. Dr." E. B. Kimble was arrested for practicing medicine without a license, May 7, 1913. The case is still to be tried.

Mrs. M. L. Gracey, an agent for the "Viavi" preparations, was arrested for practicing without a license, Nov. 2, 1912. The evidence presented in the trial, Dec. 31, 1912, was said to be absolutely convincing, but the jury rendered a verdict of not guilty, perhaps through sympathy for a "pretty woman."

Mrs. Amelia Jost, a "magnetic healer" and a masseuse, was arrested, Dec. 10, 1912, for treating cancer. In this case also, through sympathy, a verdict of not guilty was rendered by a jury, Jan. 28, 1913. The latter two cases are the only instances on which prosecution failed.

Dr. H. Erl Coger of the "Famous Erle Institutes of the World," a "beauty specialist," attempted to practice medicine without a license. He was arrested, Nov. 3, 1912, but left the country, forfeiting his bond, Nov. 20, 1912. He left a message that he was "disgusted with the medical profession of San Antonio."

Dr. A. Pratt, of the "Pratt Institutes of New York and Chicago," another beauty specialist, was frightened away by the action against H. Erl Coger.

The case of F. H. Seeley, the "truss expert," "who fitted the Czar of Russia," and who was arrested, May 7, 1913, is still to be tried.

A. G. Dellenbaugh and G. W. White, mentioned before, were arrested the second time in June, 1913, but have not yet been tried.

Among the other successful prosecutions were the cases of two traveling opticians who were arrested at Halletsville for treating diseases of the eye. Both were convicted and fined $50 each and given one hour in jail. Fourteen "fortune-tellers," who did "magnetic healing" on the side, were convicted of vagrancy and made to pay a fine. A number of other fakers were caused to cease their business by a warning that they would be prosecuted if they continued their misleading advertisements. In addition about fifty individuals selling different kinds of "cure-all" preparations were induced to move out of San Antonio.

Our old friends, the "United Doctors," visited San Antonio, but evidently did not like the "pernicious activity" of the committee of the county medical society and did not attempt to do any business. They were arrested at Lockhart, however, for practicing without a license, and were fined $50 and lodged in jail over night. Their promise to leave the state was not kept.

At Amarillo, in Potter County, two of the United Doctors were arrested for having no license, fined $50 and compelled to spend one night in jail. For some infraction of the self-imposed rules of the prisoners in the jail they were tried by the tribunal of the prisoners and fined one dollar. On their refusal to pay this fine it is said that they were subjected to the humiliation of the application of the strap where it would do most good. They then paid the fine.

The action of the legislative committee of the Bexar County Medical Society who are ridding the community of these frauds shows what can be done in practically every state, under present medical practice laws, if the matter is taken up in a vigorous manner. Physicians of the state of Texas are interested in the work of the Bexar County Medical Society, and similar action will doubtless be taken in other communities. When rightly understood, similar action by the medical societies in every state will be approved by the people.

MORLENE

A Fraudulent Goiter and Obesity Nostrum

Morlene is a preparation sold under the claim that when used externally it "will reduce goiter, tumors, thick neck, double chin, enlarged joints, inflammations, bust and waist line." It is put on the market by the Interstate Drug Co., Cleveland, O. Letters from the Interstate Drug Company are signed F. F. Finch. Two or three years ago, Finch was engineering a scheme by which physicians who prescribed certain products said to be made by the Wade Chemical Company, Chicago, were to receive half the profits on the goods sold. This disgraceful proposition was presented to certain Philadelphia physicians by one F. W. Drake, who was apparently the eastern representative of Finch. The Chicago directories list no such concern as the Wade Chemical Company, but the Federal Detail and Brokerage Company, 160 North Fifth Avenue, Chicago, declared when asked, that letters intended for the Wade Chemical Company should be addressed to them. And it is the Federal Detail and Brokerage Company to whom F. F. Finch referred prospective Chicago purchasers of Morlene.

Here are some of the claims made for Morlene:

> "A tissue absorbent for reducing excess flesh or unnatural growths."
>
> "Will produce absorption of all growths that can be reached by external application."
>
> "Will absorb tumors and abnormal growths."
>
> "Successfully used by many ladies to reduce the waist line and bust."

Specimens of Morlene were purchased on the open market and examined in the Association's laboratory. The chemists reported as follows:

> The specimen of Morlene examined is a pale grayish-yellow translucent, jelly-like substance having an odor of alcohol. Except for a statement on the label that the preparation contains 90 per cent. of alcohol, no information is given concerning its composition.
>
> Qualitative tests demonstrated the presence of alcohol, an iodid, combined fatty acids, sodium and sugar. Neither dextrin, thyroid extract, gum nor starch were found. Quantitative examination indicated that the composition of the specimen of Morlene examined is essentially as follows:

Alcohol (by weight)	53.32 per cent.
Soap	3.61 per cent.
Sodium iodid	12.01 per cent.
Sucrose (cane sugar)	12.87 per cent.
Water and undetermined (by difference)	18.19 per cent.

From the chemists' report it is evident that Morlene is essentially a gelatinized alcoholic solution of soap containing sodium iodid and sugar. While the iodids in organic combination have some reputation as obesity remedies, if taken internally, there is no evidence to show that inorganic iodids—such as the sodium iodid in Morlene—when applied externally to the unbroken skin would have the slightest influence on metabolism. Physiologic tests were made to determine whether or not the sodium iodid in Morlene was absorbed when the preparation was rubbed on the skin. Examination of the saliva and urine following such applications showed that none of the sodium iodid was absorbed; this, too, although the Morlene was rubbed on the skin and allowed to remain for twelve hours. The sugar and soap in Morlene are, of course, equally worthless for inducing "more lean" in the obese. In brief, Morlene is a worthless and fraudulent product.

Correspondence

Indigent Consumptives in the Southwest—A Warning

To the Editor:—I wish that publicity be given to the fact that this community, which is famed as a health-resort in the dry zone of the Southwest, will not give financial assistance —free hospitals or sanatorium service or transportation—to the hundreds of indigent tuberculous persons who apply for aid each year. So many incurable patients arrive here without means of support, and yet with hope of climatic cure and remunerative employment, that I desire these full explanations be made:

1. Such rainbow-chasing is a cruel hoax to perpetrate on a dying consumptive.
2. Comfort and treatment are expensive and continuous.
3. It is the rare exception, and growing rarer, that a tuberculous person can obtain employment, no matter how great his ability.

George D. Troutman, M.D., Sec'y Board of Health,
Pima County, Tucson, Ariz.

Glimpse of a Great Surgeon

To the Editor:—In a recent number of The Journal (Sept. 7, 1912, p. 814), mention was made of the semicentennial celebration of the first ovariotomy performed in France by Dr. Koeberle of Strasburg, who is now living in retirement. The operation had been performed in England, Germany and America shortly before Dr. Koeberle undertook his. At that time the performance of such a daring thing as an abdominal operation was looked on as almost criminal.

About six years ago I happened to be traveling between Heidelberg and Paris. When the train stopped at Strasburg, three people entered my compartment; a middle-aged, heavy-set woman, accompanied by a gentleman who shortly after repaired to the smoker; and a very old gentleman wearing a long black coat and a high hat, from under which straggled a few locks of white hair. Looking over the top of my book, which was, nevertheless, quite interesting, I was fascinated by the appearance of this old gentleman who wore the little red ribbon of the Legion of Honor in his buttonhole. All attempts to place him, or "size him up," failed. The only thing to which I could compare him was the castle in Heidelberg—in other words, he seemed to be a grand ruin, the remains of what must once have been an imposing physique, with doubtless a marvelous personality.

A little later the lady caught the old man's eye and greeted him, asking about his health, his wife, and his castle. In his replies the old gentleman conveyed the information that he was carrying on archeologic researches, that he had not found very much of importance in his diggings, and that at his age he preferred to travel by rail, whereas his wife journeyed to their castle in Lutzenfeld by automobile.

The old gentleman answered all questions with an effort and was certainly far from interested. Before long his head dropped forward, and he resumed his meditations.

Perhaps twenty minutes later the lady again attracted his attention by remarking that the professor probably did not remember her, to which he replied, "I must confess that you are right!"

"Well," said she, "do you remember the first big surgical operation you ever performed? My mother and your aunt brought you the patient and induced you to operate."

"To be sure!" said the professor, becoming animated, his eyes glowing. "It was the fiancée of a locomotive engineer, and the next year she had twins!"

A few personal remarks were interchanged, and the train approaching his destination, he left the train.

Shortly afterward I asked the lady the name of the gentleman, to which she replied that although I could not be acquainted with medical subjects, she would tell me the story.

It seemed that this lady's mother and the doctor's aunt were very close friends, and had always predicted a big future for young Koeberle, whom as a boy they had watched cutting open and sewing up birds. After he had been practicing for a while, a young girl who had been in their employ at various times, and whom they knew to be poor but good, began to attract a great deal of attention and to set tongues wagging in the village by the increased size of her abdomen. Rather than endure it any longer, the girl had threatened suicide, and certainly would have carried out her threat had these two good souls not persuaded young Koeberle to perform a radical operation for the cure of what proved to be an ovarian tumor, which the doctor did in the presence of a great number of physicians. This encounter in a railway train with one of the most famous European surgeons was to me so interesting that I felt that its reading might be pleasing to others.

René Bine, M.D., San Francisco.

"The First Fifteen Medical Colleges in the United States"

To the Editor:—In The Journal (April 26, 1913, p. 1318) is given a list of the "first fifteen medical colleges in the United States." In this list the Castleton Medical College is not mentioned. I quote from the *Vermonter* for May, 1903:

> The first medical school established by act of the legislature in Vermont was chartered Oct. 29, 1818. This act gave to Drs. Theodore Woodward and Selah Gridley and their associates the charter of "The Castleton Medical Academy." A subsequent act in 1819 gave them the power to "confer those honors and degrees which are usually conferred by medical institutions." The first course of lectures at Castleton began Nov. 15, 1818. In 1821 the name of this institution was changed to the "Vermont Academy of Medicine." The fatal illness of Professor Woodward in 1838 arrested the work of the school temporarily, but in 1839 a new faculty was elected and in 1841 the name was again changed to the "Castleton Medical College," and from this time for twenty years the school prospered. During the period from 1820 to 1827 a "conventional connexion" existed between this institution and Middlebury College, by which the degrees were conferred either at Castleton or Middlebury on such students as were found worthy. The Castleton Medical College for many years occupied a prominent position in the medical world. Its graduates numbered 1,542 and its faculty at various times was 41.

Charles W. Allen, M.D., Hoboken, Pa.

[Comment.—Our correspondent's point is well taken. It should have been stated that our previous list gave the fifteen colleges first organized, which continue to exist either as originally organized or under the names of other schools with which they merged. The following seven medical schools were organized during the same period, but later became extinct. The rank of each is shown by the figures in parentheses:

1. 1911, (7) Brown University Medical Department, *Providence, R. I.* Extinct 1827.
2. 1813, (9) College of Physicians and Surgeons of the Western District of New York, Fairfield. Extinct 1840.
3. 1818, (11) *Castleton Medical College, Castleton, Vt.* Extinct 1861.
4. 1823, (16) *Berkshire Medical College, Pittsfield, Mass* Extinct 1867.
5. 1826, (19) *Medical College of the Valley of Virginia,* Winchester. Extinct 1861.
6. 1826, (20) Winchester Medical College, Winchester, Va. Suspended 1829. Revived 1850. Burned and extinct in 1861.
7. 1827, (22) Washington University School of Medicine, Baltimore. Suspended 1851. Reorganized 1867. Extinct in 1877.

A life chart showing all medical colleges which have been organized in the United States is to be published in the next Educational Number of The Journal, Aug. 23, 1913.—Ed.]

The Physician and Public Health.—The thoughtful physician regards himself as much more than a physician to the individual case. In the larger work of eradicating communicable disease from society he is the diagnostician and health authorities must have his diagnosis before they can apply the remedial measures necessary.—*Bull. Ohio State Board of Health.*

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BENEFITS DERIVED FROM CHANGE OF CLIMATE FOR TUBERCULOUS PATIENTS

To the Editor:—I have a tuberculous patient whom I have advised to go to the Pacific coast. This is a case following pneumonia and pleurisy and, although he spits blood, he has had no hemorrhage. He is in moderate circumstances and can well afford to be idle for several months. Can you advise me as to the best place for him, sanatorium or otherwise, and also give me the name of a good, reliable doctor to place him under?

J. Farrage, M.D., Deering, N. Dak.

Answer.—Our correspondent fails to state the part of the coast to which he has advised his patient to go, consequently we refer him to the sanatoriums listed in The Journal, and for information concerning physicians to the American Medical Directory. It is hardly necessary to say that the physician himself must assume the responsibility for deciding whether the patient shall make a change of climate and where he shall go. Each case must be decided on its individual merits. It is generally admitted that patients who are in a condition to take full advantage of the opportunities for out-door life afforded in the southwestern climate are benefited by such a change, but that if they must remain indoors, locality makes little difference. Two matters are of special importance in deciding the question: 1. The physical condition of the patient. Advanced tuberculous disease and conditions which are sufficiently active to cause fever contra-indicate a removal to another climate. 2. The financial status. Tuberculosis which can be benefited by removal to another climate is a chronic disease; recovery is a matter of years, and a premature return to an unfavorable climate will undo the benefits already obtained. Consequently, the patient who contemplates removal to another climate should be prepared to live in comfort for one or two years. The treatment is necessarily an expensive one, and the numerous cases in which patients have been sent to a strange community to become public charges warn us not to recommend such a course except when the financial situation makes it possible without hardship. The psychic influence of such a change should be carefully considered: to send such a patient away from home among strangers cannot fail to have a depressing and unfavorable influence on his disease. This, of course, will be more marked in some cases than in others.

SARCOMA IN CHILDREN

To the Editor:—Please give references to literature on sarcoma in children.

W. G. Ward, M.D., Lynn, Mass.

Answer.—The following may be referred to:

Bondy, J.: Angiosarcoma of the Liver in an Infant, The Journal A. M. A., March 25, 1911, p. 873.
Alexander, H.: Sarcoma in Pelvis in Children, *Arch. f. Kinderh.*, 1912, lviii, Nos. 1-3; abstr., The Journal, Aug. 3, 1912, p. 406.
Miningham, W. D.: Sarcoma of the Uterus in a Child; Operation; Recovery, *Jour. Med. Soc. New Jersey*, April, 1910; abstr., The Journal, April 23, 1910, p. 1406
Lesage, A. and Girault: Sarcoma of Ovary in Infant, *Arch. de méd. des enfants*, March, 1913.
McCarley, T. H.: Sarcoma of the Kidney in Infants, *Jour. Oklahoma State Med., Assn.*, November, 1912.
Cline, L. C.: A Case of Sarcoma of the Tonsil in a Young Child, *Laryngoscope*, March, 1911.
Rocher, H. L.: Sarcoma of Upper Jaw in Infant Under Two, *Rev. mens. de gynéc., d'obst. et de pédiat.*, March, 1912.
Carson, N. B.: Excision of the Clavicle for Small Round-Celled Sarcoma in Child of Nine Years, *Interstate Med. Jour.*, August, 1911.
Wellington, J. R.: Sarcoma of Kidney in Child of 16 Months, *Washington Med. Ann.*, March, 1910.

ACTION OF SALIVA ON BLUE LITMUS

To the Editor:—Kindly explain why the saliva from some tongues turns blue litmus red. A patient told me that her dentist said she was "full of acid" and that "acid was hurting her teeth." Saliva from her tongue did turn litmus red, while my own did not.

C. B. A., Toledo, Ohio.

Answer.—The saliva may readily become acid from fermentation occurring in the mouth, especially in interstices between the teeth. This fermentation is usually productive of lactic acid. The influence of general conditions on the reaction of the saliva has not been very thoroughly investigated although there is evidence that it sometimes becomes acid from the condition of the blood without local fermentation.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

ALASKA'S NEW MEDICAL PRACTICE ACT

The practice act recently enacted by the Alaska Territorial Legislature does not differ in any essential particular from those in force in most of our states. As the latest enactment on this subject, this law will be of interest. An abstract follows:

Board.—The Territorial Medical Examining Board consists of eight members, two *from each judicial* district, appointed by the governor, for a term of two years and no member is to serve *for more* than two terms in succession.

Board Members.—J. L. Myers, M.D., Ketchikan; J. H. Mustard, M.D., Nome; J. M. Sloan, M.D., Nome; D. H. Sleem, M.D., Valdez; J. H. Romig, M.D., Seward; W. G. Cassels, M.D., Fairbanks; I. H. Moore, M.D., Ruby; H. C. DeVighne, M.D., Juneau, secretary.

Examinations.—Examinations are held beginning on the first Tuesday of January and July of each *year* at Juneau, or such other place as the board may designate.

Fees.—Examination or reciprocal registration fee, $25.

Application for License.—Applicant must show evidence of being 21 years of age, of good moral character, and must have graduated from a duly authorized *medical* college. He must submit to a written but practical examination in anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, *practice of* medicine, surgery, obstetrics, diseases of the eye and ear, medical jurisprudence and such other subjects as the board deems advisable.

Temporary Permits may be issued, valid until the next meeting of the board. The *board* is empowered to refuse or revoke a license for cause.

College Standard.—Applicant must have graduated from a "duly authorized medical college" defined in relation to temporary permits as a college having standards equal to those of the Association of American Medical Colleges.

Reciprocity.—The board in its discretion is empowered to license without examination applicants holding licenses from other states which have *reciprocal* relations with Alaska, where the applicant fully complies with the requirements of the territory.

Exemptions.—The act does not apply to emergency services, or to commissioned officers of the United States service while in the performance of their official duties, or to physicians or surgeons from the United States called into consultation, or to physicians actually practicing in Alaska prior to the passage of this act. There is to be no discrimination against any particular school of medicine, surgery or osteopathy.

Definition.—Any person shall be deemed as practicing within the meaning of this act who shall have and maintain an office or place of business with his or her name and the words "physician and surgeon," "Doctor," "M.D" or "M.B." in public view, or shall assume or advertise the title of doctor or any title which shall show or shall tend to show that the person assuming or advertising the same is a lawful practitioner of any of the branches of medicine or surgery in such a manner as to convey the impression that he or she is a practitioner of medicine or surgery under the laws of this territory, or any person who shall practice medicine or surgery under a false or assumed name, or for a fee prescribe, direct or recommend for the use of any person any drug or medicine for the treatment, care or relief of any wound, fracture or bodily injury, infirmity or disease.

Note.—Until the present practice act was secured the laws regulating medical practice in Alaska were contained in the criminal code, approved March 3, 1899, and the civil code, approved June 6, 1900, and amendments approved Feb. 6, 1909, (Sections 10 to 18 of an act of Congress entitled: "An act relating to affairs in the territories," approved Feb. 6, 1909, 35 Statutes at Large, 600.) Present law approved April 29, 1913.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

MASSACHUSETTS: State House, Boston, September 9-11. Sec., Dr. Walter P. Bowers, Room 159, State House.

MISSOURI: Coates House, Kansas City, September 2-4. Sec., Dr. J. A. B. Adcock, State House, Jefferson City.

NEW YORK: September 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

Arkansas May Report

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, May 13-14, 1913. The number of subjects examined in was 12; total number of questions asked, 10; percentage required to pass, 75. The total number of candidates examined was 78, *of whom 56 passed and 22 failed.* Eleven candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas (1913) 75.8, 76.3, 76.7, 76.9, 76.9, 77.2, 77.6, 78.4, 78.9, 78.9, 80.1, 80.1, 80.2, 80.9, 82.6, 84.2, 84.4, 86.6, 89.2, 90.3.		
Chicago College of Medicine and Surgery	(1913)	88.3
University of Illinois	(1905)	89.9
Rush Medical College (1884) 81.1;	(1886)	81.7
Hospital College of Medicine, Louisville (1904) 81.9;	(1893)	83.2
St. Louis University	(1912)	86.6
Jefferson Medical College (1910) 92.8;	(1912)	87.1
Memphis Hospital Medical College (1913) 78.2, 78.7, 80.5, 81.3; 81.5, 81.9, 83.6, 83.7, 85.2, 86.1, 87.9, 88.3, 88.5, 88.6.		
University of Tennessee, Nashville (1911) 83.8; (1912) 77; (1913) 80.5, 83.8, 87.2, 92.9.		
Meharry Medical College (1913) 77.2, 75.8, 80.9, 84.2.		
University of Nashville	(1903)	79.3
College of Physicians and Surgeons, Memphis	(1907)	71.2*
Chattanooga Medical College	(1897)	72.4*

FAILED

College	Year Grad.	Per Cent.
University of Arkansas (1911) 71.1; (1912) 59.6, 72.5; (1913) 58.6, 64.3, 72.4, 72.6, 73.3, 74.2.		
College of Physicians and Surgeons, Little Rock (1910) 39.7; (1911) 55.6.		
Louisville Hospital and Medical College	(1908)	55.6
University of Tennessee	(1913)	74.5
Meharry Medical College (1912) 50.9, 70.8; (1913) 52.6, 53.3, 62.5, 62.5.		
Memphis Hospital Medical College (1912) 67.2; (1913) 63.1, 74.2.		

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1904)	Louisiana
Atlanta School of Medicine	(1911)	Georgia
Chicago College of Medicine and Surgery	(1912)	Illinois
Rush Medical College, (1895) Wisconsin;	(1897)	Illinois
Kentucky University	(1906)	Kentucky
Jefferson Medical College	(1907)	Penn.
Medico-Chirurgical College of Philadelphia	(1908)	Penn.
University of Nashville, (1903) Mississippi	(1909)	Mississippi
Memphis Hospital Medical College	(1901)	Mississippi

* Credit allowed for five or more years of practice.

Georgia May Report

Dr. C. T. Nolan, secretary of the regular Board of Medical Examiners of the State of Georgia, reports the written examinations held at Atlanta, May 8-10, and at Augusta, May 15-17, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 80. At the examination held at Atlanta, the total number of candidates examined was 146, of whom 129 passed and 17 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Birmingham Medical College	(1911)	84.5
George Washington University	(1911)	87
Atlanta College of Physicians and Surgeons (1913) 80, 80, 80, 80, 80, 80.5, 80.5, 81, 81.5, 81.5, 82, 82, 82, 82.5, 82.5, 83, 83, 83, 83.5, 84, 84, 84, 84, 85, 85, 85.5, 85.5, 85.5, 85.5, 86, 86, 86, 86, 86, 87, 87, 87, 87, 87.5 87.5, 88, 88, 88, 88.5, 88.5, 88.5, 88.5, 88.5, 88.5, 88.5, 88.5, 89, 89, 89, 89, 89, 89, 90, 90, 90, 90, 90, 90.5 90.5, 91, 91, 91.5, 91.5, 91.5, 91.5, 91.5, 92, 92.5, 93, 93, 93, 93.5, 93.5, 93.5, 94, 94.5, 97.		
Atlanta School of Medicine (1913) 80, 80, 81, 81, 81.5, 81.5, 82, 82.5, 83.5, 84, 84, 84, 85, 85, 85.5, 85.5, 85.5, 85.5, 86, 86, 86, 86. 86.5, 88, 88, 88.5, 89, 89, 90.5, 90.5, 91.5.		
Southern College of Medicine and Surgery (1913) 87.5, 89.5.		
University of Louisville	(1912)	80
Medical School of Maine	(1901)	87
Johns Hopkins University (1910) 87;	(1911)	92.5
University of Maryland	(1911)	84.5
Columbia University, College of Physicians and Surgeons	(1912)	83
North Carolina Medical College	(1913)	88.5
Meharry Medical College (1913) 80.5, 81.5, 87.5, 93.5.		
University of the South	(1904)	92

FAILED

College	Year Grad.	Per Cent.
Southern College of Medicine and Surgery Atlanta (1913) 67, 68.5, 69.5, 71. 71.5, 72, 74.5, 74.5, 76.		
Atlanta School of Medicine	(1913)	73
University of Louisville	(1912)	68
Meharry Medical College (1908) 65.5; (1912) 68.5, 74, 77.5; (1913) 75.		
Knoxville Medical College	(1908)	61.5

At the examination held at Augusta, the total number of candidates examined was 29, of whom 27 passed and 2 withdrew. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1912)	83
University of Georgia (1912) 87.5; (1913) 80, 80, 83.5, 84, 84.5, 85, 85, 85, 85.5, 86, 86, 86.5, 86.5, 88.2, 88.5, 88.5, 88.5, 89.5, 91, 91, 91.5, 91.5, 91.5.		
University of Pennsylvania	(1911)	89
South Carolina Medical College	(1911)	80

Nebraska May Report

Dr. C. P. Fall, secretary of the Nebraska State Board of Health, reports the written, oral and practical examination held at Lincoln, May 28-29, 1913. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 62, of whom 60 passed and 2 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Rush Medical College, Chicago (1898) 84.5	(1913)	85.2, 86.7
Hahnemann Medical College, Chicago	(1913)	81.2
Chicago College of Medicine and Surgery (1913) 76.8, 78.2, 81.5, 82.8		
Bennett Medical College	(1913)	80.7
Kansas Medical College	(1913)	81.3, 84.5
Ensworth Medical College	(1913)	81, 84.5
Kansas City Hahnemann Medical College	(1913)	82.7
Creighton Medical College (1911) 76.8; (1912) 79.6, 80.7; (1913) 76.2, 77.1, 78.5, 78.8, 79.6, 80.1, 80.5, 80.5, 80.6, 81, 81.7, 81.7, 81.8, 82, 82, 82.3, 83.3, 83.5, 83.6, 83.7, 83.8, 85, 86.1, 86.5		
Cotner Medical College (1913) 76.2, 79.2, 79.8, 80.8, 81.5, 82, 82.3		
University of Nebraska (1913) 79.5, 79.7, 83.1, 83.6, 84.7, 85, 85.1, 85.3, 86		
New York University Medical College	(1906)	80.8
University of Pennsylvania	(1913)	86.7
Jefferson Medical College	(1912)	84.7

FAILED

College	Year Grad.	Per Cent.
Creighton Medical College (1912) 74.2;	(1912)	74.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Bennett Medical College	(1906)	Illinois
St. Louis College of Physicians and Surgeons	(1909)	Arkansas

Utah July Report

Dr. G. F. Harding, secretary of the Utah Board of Medical Examiners, reports the written examination, held at Salt Lake City, July 6-7, 1913. The number of subjects examined in was 20; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 8, of whom 7 passed and 1 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado	(1913)	86.9
Northwestern University Medical School (1912) 81.1;	(1913)	82.9, 89.9
College of Physicians and Surgeons, Baltimore	(1913)	79.2, 84.4, 84.7

FAILED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1913)*	

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Harvey Medical College	(1904)	Illinois
University of Iowa, College of Medicine	(1906)	Iowa
University of Nebraska	(1898)	Wyoming
New York Medical College and Hospital for Women	(1900)	New York

* No grade given.

Medicolegal

Sufficiency of Complaint of Practicing Without Registration

(White vs. State (Tex.), 157 S. W. R. 152)

The Court of Criminal Appeals of Texas affirms a conviction of the appellant (defendant) White of violating the physicians' registration law. The complaint charged that he did publicly profess to be a physician, and did "unlawfully treat a disease or disorder," to wit, did treat a named person for tuberculosis and also for constipation, without having first registered in the district clerk's office, etc. In his motion in arrest of judgment he sought to make the point that the use of the word "or" between the words "disease" and "disorder" rendered the complaint defective because in the disjunctive. But the court does not think that it could be said that the use of the word "or" left the complaint in a confused state. When it said a disease or disorder, to wit, tuberculosis, there could be no uncertainty. The appellant was informed specifically with what he was charged. An indictment, like any other pleading, must be read as whole, and this indictment, when so read, was not in the disjunctive nor uncertain, but it clearly and in unambiguous language informed the appellant of the offense with which he was charged, and the disease which he treated. Placing the words "to wit, tuberculosis and constipation," limited the meaning of the words "disease" and "disorder" in this particular case to those diseases, and he could have been convicted for treating her of no other disease or disorder than the two named. Therefore the complaint was certain and specific in its allegations and was not in the disjunctive when read and construed as a whole. Neither was it necessary for the complaint to allege whether the disease was a mental or physical disease; all persons are aware that tuberculosis and constipation are physical diseases.

Law as to Privileged Communications

(Forrest vs. Portland Railway, Light & Power Co. (Ore.), 129 Pac. R. 1048)

The Supreme Court of Oregon says that it is *only* by virtue of the statute that the testimony of an attending physician or surgeon relating to the physical condition of his patient is excluded, for at common law the medical man was required to testify practically the same as any other witness. Originally privileged communications were limited to those between any attorney and client, but many statutes have been passed in the various states extending this rule to physician and patient. Some enactments impose this restriction without any qualification. Others make an exception where the patient shall definitely waive the privilege or give an express consent. Under laws of the latter sort the authorities are not in accord on the subject of what shall be deemed a consent to the examination of the attending physician. Some hold that there must be an express waiver at the time of the trial. In all the cases cited in the briefs before the court the statutes have either required an express consent to the examination of the physician, or have failed to define what is meant by the terms "waiver" and "consent," or have made no exception to the restriction. The court's attention has not been directed to any other statute, like section 734 of the Oregon laws, which provides that a party offering himself as a witness shall be deemed to have consented to the examination of a physician or surgeon on the same subject. This section stills the confusion among the precedents based on statutes not having such a provision, and gives legislative sanction to the common-sense reason that, if a party of his own accord shall withdraw the privileged veil of privacy which, for his own protection, the law has placed around the relation of physician and patient, the whole matter is thereby set at large. In this case the subject under consideration, as stated in the complaint, and the subject about which the plaintiff spoke herself as a witness, was her physical condition, including a uterine displacement and nervous injuries. In testifying on that subject, under Section 734, she consented to the examination of her physician or surgeon on the same subject.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Albany Medical Annals

July, XXXIV, No. 7, pp. 381-444

1 *Benzol in Treatment of Leukemia, with Results in Case of Myeloid Form. J. Meyers and T. Jenkins, Albany, N.Y.

1. Benzol in Leukemia.—From a study of their own case and the cases reported, Myers and Jenkins draw the following conclusions:

Benzol is a valuable addition to the therapy of leukemia of any kind. Its institution is, however, so recent, and clinical experience with it is still so scanty, *that definite conclusions* as to its intrinsic value should be held in abeyance. It would seem to have no uniform action; in all cases it reduces the white cells, but in some, apparently those with very high counts, it does not reduce the leukocytes to normal, while in cases of 100,000 to 200,000 it may give brilliant results with normal white counts, greatly diminished or normal spleen, distinct gain in weight and strength, and loss of fever. On the other hand, we may have paradoxic reactions with falling white counts and gain in strength with no change in the spleen, or we may find decrease of the spleen with persisting high leukocytic counts, or there may be low counts with many pathologic leukocytes, or there may occur sudden leaps in the number of white cells. The red corpuscles and the hemoglobin are usually very beneficially influenced. When Roentgen rays can be used in combination very favorable results may be obtained, the blood returning to normal with no persisting myelocytes.

It is very probable that the results of benzoltherapy are variable for two reasons: (1) The cases in themselves vary in intensity and in the fundamental pathologic conditions or etiologic factors in the bone-marrow, the spleen or lymphoid system. (2) The results are in some way dependent on the size of the dose of benzol, which dose may be either stimulating or depressing to the tissues involved and this dose may be peculiar in a marked degree to each case or individual. The authors therefore suggest that the effect of benzol should be carefully checked by daily blood examinations so as to gage the optimum dose, and to forestall any symptoms of benzol poisoning.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

July, LXVIII, No. 427, pp. 1-200

2 *Study of Induction and Augmentation of Labor Pains. W. E. Welz, Detroit.
3 Present Status of Cesarean Section. E. P. Davis, Philadelphia.
4 Pituitary Extract in Uterine Inertia. J. C. Edgar, New York.
5 Conservatism in Gynecology. H. C. Taylor, New York.
6 *Treatment of Sterility by Intra-Uterine Stems. R. M. Rawls, New York.
7 *Spinal Anesthesia. S. D. Jacobson, New York.
8 Unilateral Fused Kidney. A. Stein, New York.
9 *Leiomyoma of Breast. L. W. Strong, New York.
10 Famous Case of *Mary Toft*, the Pretended Rabbit Breeder of Godalming. C. G. Cumston, Boston.
11 Prophylaxis of Summer Diarrhea. C. G. Kerley, New York.
12 Medicinal Treatment of Summer Diarrhea. W. L. Carr, New York.

2. Induction and Augmentation of Labor Pains.—Welz believes that the inception of parturition is caused by an anaphylactic action of protein birth substances from fetus to mother and that, therefore, we are in a position to control this physiologic act. The exact substance, he thinks, will be found in some of the lower animals and then the same may be expected in man. The danger of anaphylactic shock must be kept in mind because of the possible harm to the individual who receives the injection.

6. Treatment of Sterility.—In sterility, Rawls has found that the intra-uterine stem gives as good results as the cutting operations. It causes less invalidism and is no more liable to sequelae. The intra-uterine stem is applicable to all cases of anteflexion with abnormal cervix, except in extreme pathologic anteflexion and extreme shortening of the anterior vaginal wall. Even in those cases in which it is necessary to resort to other operations, the intra-uterine stem is a valuable adjunct. The intra-uterine stem only becomes dangerous in the hands of the unskilled and those unable to exclude inflammatory lesions. This danger applies equally well to the cutting operations or a simple divulsion and curettage.

7. **Spinal Anesthesia.**—Jacobson cites a case of acute appendicitis in which the patient was operated on successfully four days after labor under spinal anesthesia.

9. **Leiomyoma of Breast.**—The neoplasm reported by Strong occurred in a married woman 46 years old. She had noticed a tumor of the right breast which began deep in the breast four years ago; two years ago it began to enlarge. In the past six months it had occasioned some discomfort. On examination a firm, uniform tumor was felt in the upper outer quadrant of the right breast. This was freely movable under the skin and over the musculature; there was no retraction of the nipple, no ulceration and no fluctuation. The tumor outlines were not sharp but were merged with the breast tissue.

At operation a firm, fibrous tumor was found which was well encapsulated. It was situated entirely to the outer side of the nipple and separated from the nipple by its capsule. It had apparently pushed the glandular part of the breast to one side. It extended down to the fascia over the pectoralis major, and its capsule was formed in part by this fascia, so that the pectoralis itself was exposed on the removal of the tumor. The distance of the capsule from the nipple was quite appreciable so that the tumor did not arise from the region of the nipple. The tumor measured 6 by 3 cm., was oval and had a well-defined capsule of compact areolar tissue. A mass of breast tissue was received with the tumor.

On section the tumor was firm, fibrous and uniform in structure. There was a triangular cavity situated centrally, 1 cm. in its long diameter. Microscopic examination revealed a ground substance of dense hyalin connective tissue with very few nuclei. In the midst of this were irregular bundles of smooth muscle fibers generally circular in outline and of varying size. Single fibers and very small bundles also occurred. The nuclei were straight, long, with square ends, and occupied the centers of the fibers. The central space noted in the gross description appeared to be a widened lymph-space but had no distinguishable lining. Blood-vessels were scanty; the large ones lay in the stroma and had definite muscular walls which took no part in the tumor formation. Through the bundles of myomatous cells could be seen fairly numerous capillaries with distinct endothelium. The myoma cells surrounded these in a circular formation suggesting an arteriole wall. but whether the tumor took origin in that manner from the vessels or whether the cells were thus grouped for nutrition it is impossible to determine. There were many minute myomatous bundles without capillaries, showing that capillaries were not essential for their formation. An examination of the smallest muscle bundles which occurred in the areolar tissue at the edge of the tumor showed that these minute bundles were always circular, and that they often showed a central opening though without endothelium.

American Journal of Public Health, New York

July, III, No. 7, pp. 645-728

13 Diagnosis of Sick City. G. T. Palmer, Springfield, Ill.
14 Sanitary Survey. W. Rose, Washington, D.C.
15 Maggot Trap—New Weapon in Our Warfare against Typhoid Fly. E. C. Levy and W. T. Tuck, Richmond, Va.
16 Medical Statistics of Sex Hygiene; Such as They Are. J. S. Fulton, Baltimore.
17 Convenient Anaerobic Jar for Plate Cultures. S. DeM. Gage and J. H. Spurr, Washington, D. C.

Arkansas State Medical Society Journal, Little Rock

July, X, No. 2, pp. 37-65

18 Interpretation of Infant's Stools. O. K. Judd, Little Rock.
19 Plea for Better and More thorough Diagnosis by General Practitioner. C. H. Trotter, Helena.
20 Some Phases of Vaccine Therapy. E. H. Eastman, Hot Springs.

Boston Medical and Surgical Journal

July 31, CLXIX, No. 5, pp. 145-180

21 *Outdoor Treatment of Surgical Tuberculosis. R. W. Lovett, Boston, and J. E. Fish, Canton, Mass.
22 Psychopathology and Neuropathology: Psychopathic Hospital as Research and Teaching Center. E. E. Southard, Boston.
23 Some Aspects of Labor Mechanism at Pelvic Brim. A. K. Paine, Boston.
24 Roentgenoscopy of Gastric and Duodenal Ulcer. F. W. White and A. W. George, Boston.

21. **Outdoor Treatment of Surgical Tuberculosis.**—Lovett and Fish present definite figures as to the effect on children with surgical tuberculosis of living in the outdoor air. The material presented shows that even in the winter climate of New England this is not attended with risk of exciting respiratory troubles, frost bites or pneumonia. That coughs, colds and sore throats are infrequent among the children living out of doors and much less frequent than among a group of healthy boys who do not live wholly out of doors. That infectious disease has not spread among the children as easily as would have been expected. That after admission weight increases faster than in normal children and that hemoglobin also increases. That symptoms of auto-inoculation, as shown by increased temperature, are as a rule absent and the authors believe the power of resistance and repair improves under these conditions.

Cleveland Medical Journal

June, XII, No. 6, pp. 393-463

25 *Status of Roentgenology in Diagnosis of Pulmonary Tuberculosis. G. F. Thomas, Cleveland.
26 Why Western Climate Yields Poor Results for Some Tuberculous Cases. H. A. Berkes, Cleveland.
27 Tuberculous Scleritis. R. B. Metz, Cleveland.
28 Pharmacology. J. D. Pilcher, Cleveland.
29 Diphtheria Carriers. S. C. Lind, Cleveland.
30 Optic Iridectomy. L. K. Baker, Cleveland.
31 *Bronchoscope in Asthma. S. H. Large, Cleveland.

25. **Diagnosis of Pulmonary Tuberculosis.**—Thomas believes that a thorough Roentgen-ray examination is of value in cases of tuberculosis even when the other findings are positive, because it will give more accurate knowledge of the extent of the involvement; it will aid in forming a more accurate prognosis; and it will help in the choice of the proper treatment. In cases presenting a suggestive clinical history but with inconclusive or negative physical findings, the Roentgen ray is of the greatest value because it may definitely prove the presence or absence of tuberculous involvement. In such cases, no negative diagnosis is justifiable without investigation by this method.

31. **Bronchoscope in Asthma.**—One case is reported by Large that was cured by the means of the bronchoscope. In this case the patient had had nearly every possible operation on the nose and throat, but without avail. Since the treatment by the bronchoscope, he has been entirely free from asthma. Large disclaims any intention of desiring to convey the impression that the bronchoscope should be passed in every case of asthma, but if all other lines of treatment have been tried and failed, there is still one left, and that is the use of the bronchoscope.

Preliminary to the use of the instrument the parts are cocainized, either with cotton probes or with a spray, and then the sensitive areas are touched up with a 5 to 25 per cent. solution of silver nitrate or with tincture of iodin.

Indiana State Medical Association Journal, Fort Wayne

July, VI, No. 7, pp. 307-338

32 Roentgenoscopy of Gastro-Intestinal Disease. A. M. Cole, Indianapolis.
33 Case of Pemphigus Vulgaris Probdbly Due to Renal Insufficiency. G. W. McCaskey, Fort Wayne.
34 Case of Colonic Pain Simulating Renal Colic. S. J. Young, Indianapolis.
35 *Pellagra.* J. K. Pollock, Madison.

Journal of Infectious Diseases, Chicago

July, XIII, No. 1, pp. 1-170

36 Avian Tuberculosis. E. G. Hastings, J. G. Halpin and B. A. Beach, Madison, Wis.
37 Quincy (Illinois) Typhoid Epidemic. E. O. Jordan and E. E. Irons, Quincy, Ill.
38 Idenity of Entameba Histolytica and Entameba Tetragena, with Observations on Morphology and Life Cycle of Entameba Histolytica. C. F. Craig, U. S. Army.
39 Investigations of Etiology of Infectious Abortion of Mares and Jennets in Kentucky. E. S. Good and L. S. Corbett, Lexington, Ky.
40 *Serum Studies in Pneumonia. C. C. Hartman, Pittsburgh.
41 New Precision Syringe for Accurate Injection of Small Quantities; Holder for Such Syringes and for Other Purposes. M. C. Terry, San Francisco.
42 Botany of Organism of Blastomycosis. R. C. Whitman, Denver.
43 Natural Hemolysins in Rabbit Serum. J. A. Kolmer and W. W. Williams, Philadelphia.
44 Some Immunity Reactions of Edestin. B. White and O. T. Avery, New York.
45 *Rôle of Staphylococcus in Gonorrhea. C. C. Warden, Los Angeles.
46 Nitrite Destruction as Presumptive Test for Determination of Water Pollution. F. Maltaner, San Francisco.
47 *Some Chemical Conditions Influencing Acid-Proofness and Non-Acid-Proofness in Saprophytic Culture of B. Tuberculosis. W. B. Wherry, Cincinnati.
48 Effects of Desiccation of Virus of Rabies and Use of This Material in Immunization. D. L. Harris, St. Louis.
49 *Effect of Quinin on Rabies in Dogs. V. H. Moon, Chicago.

40. **Serum Studies in Pneumonia.**—Fibrin, in some instances, Hartman says, appears to be able to bind complement in the presence of serum, but the results are so irregular that they cannot be considered to be specific. Nevertheless, it is the indication of a process, the object of which is the digestion or lysis of the fibrin. Looking at it from the standpoint of auto-antibody formation, it is possible to view it as a reaction on the part of the body to rid itself of one of the products of its own manufacture. As such, fibrin does not exist in the body normally and may, perhaps, on this account, act as foreign material. When the antibodies arrive in sufficient strength, the fibrinolysis begins, by the aid of complement furnished by the blood-serum or leukocytes. Though the body might exhibit marked power to destroy or decompose the fibrinous exudate, in some instances, it may not possess the same ability to deal with the decomposition products.

The fact that a certain number of the "normal" serums in Hartman's experiments reacted with certain specimens of fibrin is of interest, indicating the presence of substances in the serum similar to that found in a few pneumonia serums. He suggests that it is possible that these reactions are not specific but are the evidence of a previous inflammatory process of a fibrinous character. The fact that the remains in non-resolution are principally fibrinous rather than cellular indicates an absence in the body of the means of removing this portion of the exudate. If the disappearance of the fibrin be entirely due to the enzyme action of the leukocytes and of the exudated serum, it seems strange that autolysis or digestion of the exudate, except the fibrin, should go on to completion or near completion, in some cases of non-resolution, leaving the fibrin intact. It rather indicates the participation of something else in addition to the autolysis or digestion by leukocytic enzymes. Whether this persistence of the fibrin is due to a lack of preparation or "sensitization" to lysis similar to the opsonic reaction, or to an inherent anti-enzymotic action, or a lack of something in the body fluids designed especially to remove the fibrin, is not apparent. Though it would appear that a common process brings about the removal of the entire exudate, nevertheless, a persistence of the fibrin in spite of the disappearance of much or all of the associated exudate in some instances, points toward a process differing from that of a leukocytic digestion, though perhaps working in association with it. The inability to immunize rabbits against fibrin is interesting as indicating that the tissues of this animal do not react to whole fibrin. A greater number of attempts with various technics would be necessary, however, to demonstrate this more fully. It was shown by the methods used that there was no ability conferred on the serum to decompose the fibrin.

45. **Staphylococcus in Gonorrhea.**—Warden submits evidence suggesting the following tentative conclusions: Many, if not all, of the Gram-negative, intracellular biscuit or coffee-bean-shaped cocci observed in the purulent discharge in acute gonorrhea, which are regarded as gonococci and which serve as criteria of diagnosis, are not gonococci, but belong to the staphylococcus group. The provisional designation *Staphylococcus urethrae* is suggested for this coccus. True gonococci are demonstrable with difficulty or not at all in smears of gonorrheal exudates or in preparations of tissues. Gonorrhea may be due to a double infection and dependent on a microbial symbiosis. Diagnosis of gonorrhea rests on cultural methods only. The old criterion, the microscopic appearance of smears, is unreliable.

47. **Saprophytic Culture of B. Tuberculosis.**—During a study of the growth of a saprophytic culture of *B. tuberculosis* in various synthetic mediums, Wherry observed that the morphology varied from minute coccoid bodies to short or long, thick or thin, straight or curved rods which were or were not acid-proof according to the conditions of growth. The culture could be rendered non-acid-proof by continual growth under conditions unfavorable to the synthesis of fats. The culture could synthesize fatty bodies rendering it acid-proof when such substances as acetates were the source of carbon and nitrogen; or from various ammonium salts and propyl alcohol; or from NH_4Cl and mannite; or from NH_4Cl and levulose, or from glycerin and glucose in the presence of peptone. Various carbohydrates and the alcohol mannite were not attacked in the absence of phosphates. Various phosphates other than KH_2PO_4 favored fermentation, but acid-proof rods developed only in cultures containing NH_4Cl and levulose in the presence of potassium dihydrogen phosphate, calcium phosphate (secondary and tertiary), sodium biphosphate (primary), sodium pyrophosphate, and to a lesser degree in the presence of sodium phosphate (secondary). Under the conditions of the experiments the spore-like bodies produced were killed by heating to 60 C. for thirty minutes. That is, they were killed unless they require some very special conditions for germination. From the results of vital staining Wherry concludes that the chemical composition of these artificially produced acid-proof tubercle bacilli is different from that of virulent tubercle bacilli.

49. **Effect of Quinin on Rabies in Dogs.**—Of three dogs treated by Moon, two are alive and healthy and one died of obscure cause two and one-half months after treatment. The control animals in every case died with the characteristic symptoms and pathologic changes of rabies. The dogs were inoculated with rabid brain material and allowed to develop active symptoms of rabies. The technic of inoculation was as follows: A portion of the hippocampus or cerebral cortex of a rabid animal was rubbed into an emulsion with normal salt solution. With a small needle a few drops of this emulsion were then injected into and around the ulnar nerve at the elbow or a long, slender needle was inserted in the lower conjunctival sac below the eyeball and extended back until the point entered or passed through the optic foramen. The injection was thus made directly into the optic tract, or subdurally. The latter method of course necessitated the employment of general anesthesia, but the results were more uniform than by the other method, and the incubation period shorter.

When active symptoms of rabies developed, as unusual excitability, restlessness, changed quality of the bark, decreased appetite, sometimes difficulty of swallowing, muscular spasms, paralysis of the legs, etc., the dog was given very large doses of quinin sulphate several times daily, while another dog inoculated at the same time and under the same conditions was allowed to go untreated as a control. The quinin was administered in capsules around which was stitched a thin covering of fresh tough meat as from the flank of beef. The dog would usually bolt these without chewing, but if he became unable to swallow, as happened several times, the same quantity of quinin bisulphate was given in solution hypodermically. The daily amount given a 6 or 7 kilogram rupture of a small ovarian cystadenoma prevent further development? This is important, but is unanswerable at present. Experience teaches that large cystadenomas, however, certainly continue to develop after rupture. In young individuals with cystic ovaries which the surgeon ordinarily removes or punctures, would it not be more conservative to determine the exact microscopic nature of a portion of the cyst wall during operation? By so doing a simple cyst may be ruptured without destruction of an ovary and cystadenomas will not be left in an attempt to conserve ovarian tissue.

109. **Lengthening Shortened Bones of Leg.**—Magnuson says that a shortened femur may be lengthened from two to three inches without any interference with blood and nerve supply, excepting in cases in which there is a large amount of old inflammatory tissue which would limit the stretching of the blood-vessels and nerves, or which might produce kinking. Ivory, being an animal matter, is entirely absorbed by the tissues, does not act as a foreign body in bone, does not cause necrosis or slough out as do most other materials. Ivory screws may be cut off flush with the shaft of the bone, leaving nothing to project into or irritate the soft parts. There is no flange or shoulder on the screw to prevent it from entering to its full length. The method of application insures the screw fitting accurately into the hole made for it, since a tap is put through first; the deep thread into the bone insures a good hold, prevents any lateral motion, and the absorption of fluids by the ivory insures that in twenty-four hours the screw will fit so closely that it will not allow the slightest motion between the fragments. No great force is needed to drive the screws in, and eventually they will be absorbed, leaving the healed bone without defect. In case of infection after the operation the ivory will not be absorbed until the suppuration has ceased. Lengthening bones would be of benefit in shortening after fracture, faulty development, or injury to the epiphysis before full growth is reached. The amount of extension obtained in these experiments was from three-eighths to one-half inch in dogs about the size of a fox terrier, without the slightest injury to blood-vessels or nerves, making it seem very probable that from two to three inches may be obtained in a bone as long as the average human femur, without any serious after-effects. It is stated here that the method of sterilization of the ivory screws which Magnuson has found best is saturated solution of bichlorid of mercury in alcohol, placed in the autoclave, under high steam pressure, for four hours. If these ivory screws are boiled they become warped and useless.

112. **Bacteriologic Finding in Pemphigus.**—Hendry reports on the isolation of an anaerobic bacillus from the vesicles and treatment of the disease by an autogenous vaccine. A further report is promised.

117. **Three-Finger Fluctuation.**—The method described by Handley consists essentially in the artificial production of a true expansile impulse in an inelastic bag containing fluid. The tips of the two forefingers and of the middle finger of the left hand are firmly planted on the swelling, marking out an equilateral triangle of an area rather smaller than the limits of the swelling. The right forefinger is next sharply pressed into the swelling at right angles to its surface. Fluctuation is present only if the two fingers of the left hand move away from each other horizontally in the plane of the skin at the moment when this is done. Any movement of the fingers in a vertical direction is to be ignored.

123. **Method of Ventrofixation.**—A median laparotomy is performed by Stetten and the round ligaments are ligated about 2 inches from the uterus. They are divided proximal to the ligatures and freed from the broad ligaments up to the uterine cornua by a few snips of the scissors. The peritoneal edges of the incisions in the broad ligaments are united by a running catgut suture. Ligatures are now passed through the broad ligaments between the tubes and ovaries, and the tubes are freed to their uterine attachment. The freed round ligaments and tubes are now brought through a stab wound of the fascia, muscle, and peritoneum on either side, three-quarters of an inch away from the edge of the abdominal incision. They are drawn taut and fixed to the fascia with a catgut suture. The peritoneum is closed with continuous catgut, one stitch passing through the fundus of the uterus, the surface of which has been scarified. The muscle and fascial layers are closed in the usual manner with interrupted chromic gut sutures. The excess of tubes and round ligaments is removed and the tubes are ligated, the stumps being cauterized with a Paquelin. Enough of the tubes and ligaments should be left so that they overlap in the median line. They are stitched to the fascia and to the structures of the opposite side with a few sutures of catgut. The skin wound is closed completely.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

July, X, No. 115, pp. 289-336

1 Case of Severe B. Coli Infection of Urinary Tract; Nephrectomy; Recovery. H. W. Wilson.
2 *Case Simulating Meningitis due to Escape of Thread-Worms into Peritoneal Cavity through Perforated Appendix. R. N. H. A. Whitelocke.
3 *Treatment of [illegible] 'rs with Bouillon Cultures of [illegible] Aureus. J. D. Rolleston.
4 Malted Food in Treatment of Enteritis in Young Children. S. Veras.

2. **Case Simulating Meningitis.**—A girl, aged 5½ years, was admitted to the hospital with the diagnosis of tuberculous meningitis. A year previously an enlarged lymph-node had been removed from the side of her neck. She seemed very ill, had a temperature of 102.4 F. and a pulse-rate of 112. There was marked converging strabismus, with contraction of both pupils and some photophobia. For thirty-six hours or more she had been sick, was restless, and now and then screamed out when apparently dozing. She was very constipated and an enema had produced but a small result. She slept badly and often refused food; any attempt at drinking brought on immediate vomiting. She had urinary incontinence. There was no disease of the ears or air-sinuses. After two days she began to pick at the bedclothes, to throw herself about in bed in a restless, irregular manner, and to wet herself frequently. At this period, Whitelocke noticed for the first time that she kept her right lower limb fully flexed and drawn up to the abdomen, while she moved the left from time to time, often extending it. Palpation of the lower abdomen gave the impression of increased rigidity in the right rectus muscle, and caused her to call out when even gentle pressure was brought to bear over the cecum. There was no distinct dulness on percussion anywhere.

When the peritoneum was opened a small quantity of semipurulent fluid escaped, emitting a fecal odor. An inflamed process of omentum was found covering in the anterior surface of the cecum and the appendix completely. In peeling the inflamed omentum from the appendix Whitelocke came on a colony of about a dozen dead thread-worms. After the appendix had been cleared and delivered through the wound it was found to possess a pin-point perforation ¾ inch from its distal extremity on its mesial aspect. Through the minute perforation a living thread-worm was to be seen wriggling until it finally extruded itself on to a swab held to receive it. In quick succession three or four others of smaller size, and presumably of less mature age, passed in single file through the opening. The base of the appendix was crushed and ligatured, and the organ excised according to custom. The omentum was then drawn into the wound and carefully examined, and as a result three more live worms were removed from its meshes at some distance from the inflamed and previously attached portion. In swabbing the pelvic peritoneum with hot saline in search for others, four more live ones were caught and removed. The wound was then closed. The appendix when cut open was found to be crammed full of oxyurides of all sizes and ages. The very small and immature worms greatly predominated. The mucous membrane was considerably ulcerated, especially in the immediate neighborhood of the perforation. The opening was so small that a fully grown oxyuris squeezed itself through with decided difficulty. After the operation the nervous symptoms and sickness very soon disappeared, the pulse and temperature fell to normal on the following day, and from this time onward the recovery was rapid and complete.

3. **Treatment of Diphtheria Bacillus Carriers.**—Ten chronic diphtheria bacillus carriers were treated by Rolleston by spraying and swabbing the throat or nose with a bouillon culture of *Staphylococcus pyogenes aureus*. In six faucial cases the findings became negative within two to seven days after starting the treatment. In two nasal cases the treatment was ineffective. In all but two cases a mild form of sore throat was produced, but no complication ensued.

British Medical Journal, London

June 19, II, No. 2742, pp. 109-156

5* Conservative Treatment of Tuberculosis of Joints. W. S. Fenwick.
6 The Profession, Public and Insurance Act. R. L. Langdon-Down.
7 Medicine and Eugenics. J. Cowper.
8 *Case of Perforated Common Bile Duct followed by Subphrenic Abscess, Operation and Recovery. C. Campbell-Horsfall.
9 Pellagra in Great Britain. L. W. Sambon.
10 Nodular Leukemia. G. R. Ward.
11 Case of Ectopia Cordis. W. Rolland.

5. **Treatment of Tuberculosis of Joints.**—Speaking of the use of tuberculin in joint cases, Fenwick says he is convinced of the value of the administration of tuberculin in all cases of surgical tuberculosis, unless the infection with the bacilli is so grave as to cause a highly oscillating temperature or other grave signs. No case of tuberculosis should be operated on without a preliminary course of tuberculin, as this will help to guard against those distressing cases of general tuberculosis arising after operation. Tuberculin must not, however, be regarded as more than a useful adjunct. Alone it will not cure. All other means at our disposal should also be employed. The methods of administering tuberculin are by hypodermic injection and by the mouth. The former is obivously the more scientific, and the latter has been generally condemned as of no value. Nevertheless, it is a method that Fenwick has employed as a routine in the outpatient department, and he speaks of it in the highest possible terms. It has the merit of extreme ease of administration.

Fenwick has three bottles made up with normal saline containing in each ounce 1/1,000, 1/100 and 1/10 mg. of T.R.: 1/2 per cent. phenol helps to preserve the solution. He commences by giving a child ʒj of the weak solution, or 1/8,000 mg., and the next week doubles the dose provided there has been no rise of temperature. In the outpatient department he rarely increases the dose beyond 1/100 mg., as supervision is not easy. He believes strongly in small doses to begin with, gradually increased and continued over a long time. He has never seen any harm result. As a rule, after one or two doses the appetite and color are better, and the lesion shows slight improvement.

8. **Perforation of Common Bile Duct.**—The patient whose history Campbell-Horsfall reports was a married woman, aged 45, had suffered for years from dyspepsia and spasmodic pains which were at times intense and radiated over the upper abdomen and chest. Campbell-Horsfall saw her during two attacks, which, he says, were unmistakably due to gallstones, and it was during the last of these that the catastrophe occurred which is the basis of this note. The patient had been seized with intense pain in the chest and upper abdomen and signs of common duct obstruction, jaundice, bile-stained urine, pale stools and a moderate degree of fever. She had consented to operation, and this was to take place as soon as the acute symptoms had subsided. Suddenly she became quite immobile, pale and cold, pulse 120 and temperature 100 F., was seized with an agonizing pain causing her to jump out of bed, and then collapsing. There was no rigidity of the abdominal muscles, nor was there any marked tenderness. Deep pressure in the region of the gall-bladder produced a well-marked diaphragmatic grunt. The following day there was moderate distention of the abdomen; pulse 120, but temperature falling. From the anamnesis Campbell-Horsfall concluded the common duct had ruptured.

On opening the peritoneum bile-stained fluid and pus welled up into the opening. After shutting off the peritoneal cavity an exploration was made of the biliary region, and although one could trace the stream of bile and pus down to the region of the common duct, the actual tear could not be located; the gall-bladder was shrunk. A rubber drain was carried down to the common duct and a cigarette drain placed in the right kidney pouch. An incision was next made over the pubes, and Douglas' pouch was found filled with bile-stained fluid; this was gently mopped away and a tube inserted. The visceral peritoneum did not show any marked inflammatory action. The pulse was much better after the operation, and the patient was put back to bed in the Fowler position and proctoclysis commenced. She quickly rallied from the operation. Next day she was fairly comfortable, but looked blue and the skin leaky. As there had been no vomiting and she was very thirsty cold water was allowed freely. The tubes were removed on the fifth day.

The day following she complained of pain in her left side; the temperature went up to 103 F., and pulse 112. A definite fluctuating mass could be made out on the left side. The same evening under ether Campbell-Horsfall evacuated a large collection of bile-stained material from this side and inserted a drain. There was a good deal of shock after this, but under salines the pulse recovered and the patient seemed much easier. The temperature fell, but the pulse still remained rapid. In spite of this her condition was not satisfactory, respiration became more frequent, the upper part of the abdomen ceased to move and on March 25 there was distinct evidence of another collection of matter in the upper abdomen. Under ether an incision was made through the left upper rectus, and at once he came on a large accumulation of biliary matter, together with a quantity of mucus similar to the contents of the small intestine. The cavity could be traced up under the diaphragm toward the right side. A large drainage tube was put in and a counter-opening made in the left flank, with througn-and-through drainage. Almost at once there was a marked improvement in the patient's condition, and this continued. During this time she had an attack of pain, evidence of renewed blocking of the common duct, but whatever the cause it quickly subsided, and with the exception of some fluid in the left chest (which has now disappeared) her convalescence has been uneventful, and she is now in better health than she has been for many years past, and instead of denying herself foods is able to eat and digest anything.

Journal of Ostetrics and Gynecology of British Empire, London

June, XXIII, No. 6, pp. 353-442

12 *Esthiomene, or Lupus Vulvae: Historical Pathologic and Clinical Study with Analysis of Six Cases. L. Kurz.
13 *Menstrual Molimina: Adult Cases. C. Chisholm.
14 Adenocarcinoma of Body of Uterus in Association with Adenomyoma Diffusum Benignum. H. Littlewood and M. J Stewart.

12. **Esthiomene.**—An analysis of six cases and of the iterature published on the subject leads Kurz to the conclusion that esthiomene is a *manifestation* of tertiary syphilis and that the syphilitic virus is the sole cause of the condition. There are a number of accessory factors that have a marked influence on the course and appearance of esthiomene, but Kurz does not see how they could be mistaken for the causes of a state which, considered from every possible point of view, bears the stamp of syphilis. Such accessory causes are inflammation, abscesses, uncleanliness and above all a low state of health aptly termed by the French "*la misère physiologique.*" A case of esthiomene is occasionally met with which may at the outset simulate tuberculosis, cancer or indurative elephantiasic edema. Such cases are, however, rare, and a careful inquiry into the history of the case cannot fail to enlighten the student regarding the class of disease to which such a case should be relegated. When a

portion of tissue can be removed for examination a first glance through the microscope reveals the true nature. A positive Wassermann reaction will confirm it. The majority of early cases of esthiomene respond to antisyphilitic treatment. The late and chronic cases which do not respond do not indicate that esthiomene may at times be due to other causes than syphilis; there are many tertiary lesions, such as strictures and leukoplakia and others which do not yield to the usual antisyphilitic remedies and which are none the less due to syphilis.

13. **Menstrual Molimina.**—Chisholm says passive hyperemia of the pelvic organs appears to be the cause of much local pain. This is relieved in the majority of cases in the first day after onset of menstruation. Unhealthy hygienic conditions and mode of life contribute to lowering the general nervous system so that pain is readily felt and a habit of pain at the menstrual period formed. Nervous symptoms, reflex and vasomotor, are often associated with secondary menstrual discomfort. Except in a very small minority of cases this menstrual discomfort does not affect the woman's capacity for carrying on her ordinary work. Any appearance or development of mentrual pain shows a pathologic condition whose cause, whether local or general, ought to be investigated and treated before the discomfort becomes established as a regular habit.

Lancet, London

July 19, II, No. 4690, pp. 125-198

15 Early Diagnosis and Treatment of Pulmonary Tuberculosis. J. M. Bruce.
16 Three Cases of Carcinoma of Umbilicus in Adults. A. E. Barker.
17 Twelve Cases of Paratyphoid Fever Associated with Epidemic of Typhoid. J. Watt.
18 Incidence of Stone in Egypt: Series of 312 Operations. F. C. Madden.
19 *Four Cases of Black (Pigmented) Appendix. W. H. Battle
20 Procidentia of Uterus and Rectum at Age of 27 years. D. Drew.
21 Surgical Tuberculosis in Children, with Method of Treatment. A. H. Tubby.
22 *Analysis of Thirty-Five Consecutive Cases of Bradycardia. C. E. Lea.

19. **Black (Pigmented) Appendix.**—Microscopic examination showed the deposit of pigment in these cases cited by Battle to be in the mucous membrane, both in and between the cells. Chemical analysis showed that the pigmentation was produced by a deposit of iron, the exact combination not being defined owing to the small quantity of material available. The pigmentation was deep and most extensive in all, evidently going for an indefinite distance into the bowel. Its deposit to such an extent suggests that it was due to absorption from the contents of the large intestine, in a manner similar to that of the deposit of lead in the lead worker. There is, no doubt, a good deal of iron in the contents of the large bowel, but here there must have been more than usual and that for a long period. Had such a condition been likely to occur from the use of iron given in the form of medicine, the post-mortem records must have described it long ago. These cases are the only ones in which Battle has found such a curious condition (for it has no clinical significance) in a long series of operation cases. He thinks that it may be due to excess of iron in the flour which is put out from the roller-mills, the influence of which on appendicular constipation, the formation of some concretions, and when in a coarse form the direct production of appendicitis, is difficult to estimate.

22. **Analysis of Thirty-Five Cases of Bradycardia.**—The period of Lea's observations was two years. In all cases polygraphic records were gained. Relative incidence: true bradycardia, seven cases; missed beat, nine cases; auricular fibrillation, sixteen cases; heart block: auricle active, three cases. Lea concludes that in most cases the cause of bradycardia (excluding Class 1) may be attributable to altered a. v. conductivity, that such a cause is responsible not only for Classes 3 and 4, but also possibly for Class 2; and that in most cases of auricular fibrillation, but not all, the cause is digitalis

Bulletin de l'Académie de Médecine, Paris

July 1, LXX, No. 25, pp. 1-19

23 Transient Familial Paralysis of the Legs; Six Cases in Two Families. E. Lenoble and C. Achard.
24 Migraine of Ethmoidal Origin. G. Guisez and Balzer.

Journal de Médecine de Bordeaux

July 13, LXXXIV, No. 28, pp. 445-460

25 Necessity for Educating the Public in Hygiene. L. Barthe.
26 The Alkaloids of Kola. (Sous quelle forme les alcaloides de la kola existent-ils dans les fruits?) P. Carles.

Lyon Médical, Lyons

June 29, XLV, No. 26, pp. 1389-1444

27 *Nervous Throat Disturbances. (Psychopathies pharyngolaryngées.) Collet.
28 *Nervous Manifestations in Syphilis after Salvarsan. (Des accidents, dits "neurorécidives" consécutifs aux injections d'arséno-benzol.) Carle.
29 The Latent and the Active Phases of High Blood-Pressure. (Les deux phases de l'hypertension artérielle.) L. Gallavardin.

July 6, No. 27, pp. 1-48

30 Local Hemorrhage Causing Hemolytic Jaundice. (Rapport des pigmentogenies locales et des ictères hémolytiques.) E. Leuret and H. Gauvenet.
31 Vertigo with Glaucoma. L. Dor.

27. **Nervous Affections of the Throat.**—Collet describes a case of nervous aphonia in a choreic boy of 11; one of difficult deglutition in a neurasthenic woman of 50; a nervous cough in a boy of 17 who afterward developed melancholia; paralysis of the palate in a neuropathic elderly woman, and a case of extreme dyspnea in a physician of 50 who passed into a condition of manic-depressive insanity. Collet emphasizes the necessity of extremely careful examination in such cases to exclude organic disease.

28. **Nervous Manifestations after Salvarsan.**—Carle comments on the number of cases of "neurorecurrences" which have been published following the intravenous administration of salvarsan. He reports from his own experience a case of fatal hemiplegia, and discusses the various theories as to the cause of such accidents after salvarsan. His conclusion is that they are due to the breaking out of latent syphilitic foci in the nervous system as the result of the lowered resistance produced by the drug. He believes that where the symptoms point to involvement of the nervous system, such as severe and continuous headache, insomnia, agitation, inability to work, asthenia and vertigo, the medicinal treatment should be confined to mercury; if salvarsan is used it should be given only intramuscularly and with the greatest caution. His previous discussions of the subject were in the May and October, 1912, issues of the *Lyon Médical.*

Presse Médicale, Paris

July 9, XXI, No. 56, pp. 565-572

32 Enhanced Resistance of the Blood-Corpuscles. (De l'hyperresistance globulaire au cours de certains états lytiques des sérums.) E. Weill and A. Dufourt.
33 Reflex Contraction of the Large Intestine from Impulses Emanating from the Stomach. H. Lebon and P. Aubourg.

July 12, No. 57, pp. 573-584

34 External Secretion and Internal Secretion. (L'élaboration cellulaire et la sécrétion.) A. Petit.
35 Efficacy of Electric Treatment of Rhinophyma—Hypertrophic Acne. H. Bordier.

Revue de Chirurgie, Paris

June, XXXIII, No. 6, pp. 785-934

36 *Nerve Tissue Tumors Simulating Spina Bifida. (Les faux spina bifida.—Médullomes ou médullo-embryomes.) E. Estor and E. Etienne.
37 *Sarcomas of Tendon Sheaths. (Les sarcomes des gaines tendineuses.) J. P. Tourneux.
38 *Formation of Vagina. (Création d'un vagin en cas d'absence congénitale de ce conduit par greffe d'une anse intestinale.) E. Quénu and A. Schwartz.

36. **False Spina Bifida.**—Estor and Etienne recently removed a congenital tumor from the back of the neck which they supposed to be a spina bifida, but a central plug of nerve tissue was found in the tumor, as also in a similar tumor removed by Vialleton. Both tumors were easily excised with-

out serious effects. They were evidently of embryonal origin, either a malformation or a rudimentary second embryo. Differentiation of this class of tumors from spina bifida is important as they can be removed with ease. The fact that they have a pedicle differentiates them from dermoid cysts, angiomas, etc., and the absence of nervous disturbances and of tenderness excludes spina bifida. The only danger in operating is from the communication with the meninges, thus possibly opening up the meningeal cavity during the operation which might entail serious losses of cerebrospinal fluid. It is necessary, therefore to ligate the pedicle with extreme care, and keep close watch over the patient afterward until healing is complete. The operation in one of the cases reported was done at the age of 40; the diameter of the tumor was about the length of the boy's ear in one case; in the other the tumor projected like half a banana.

37. Sarcoma of Tendon Sheaths.—Tourneux has found quite an extensive literature on this subject with records of ninety-three cases, all but thirty-eight in males. The youngest patient was 5, the oldest 83, but the majority were between 18 and 40. In sixty-six cases the lesion was in the forearm in six, in the hand in twelve and on the fingers in forty-eight. In twenty-six cases the sarcoma was on the foot in nineteen and on the toes in seven, while a tendon sheath in the leg was involved in only one instance. The sheaths involved belonged to flexor tendons in all but sixteen cases. There was a history of trauma in fifteen of the ninety-three cases. The predilection of the sarcoma for the plantar and palmar regions suggests that repeated slight trauma must be a contributing factor. The symptoms are long exclusively local: tumefaction is constant but there may or may not be pain. The prognosis is grave as the list of recurrences is a long one and many of the patients were lost sight of. The ultimate outcome is more promising the earlier the growth is cut out, and especially when the microscope reveals marked predominance of multinuclear elements—myeloplaxes. If the growth has spread so that even with a long operation there is little hope of removing all the tissues showing change, disarticulation or secondary amputation should be the rule. There was prompt recurrence and generalization in eight of the fourteen cases of round-celled sarcoma and in six of sixteen cases of the spindle-celled variety. Boeckel did four operations for recurrence on one patient. Discovery of the round-celled variety thus calls for secondary amputation without delay. To wait for metastasis is fatal.

38. Formation of Artificial Vagina.—Quénu and Schwartz compare the different technics that have been applied and state that the results seem to have been excellent in the fifteen cases on record, whatever method had been employed. A personal case is reported in detail.

Revue Mens. de Gynécologie, d'Obstétrique et de Pédiatrie, Paris

June, VIII, No. 6, pp. 373-424

39 *Mental Disease of Genital Origin. (Psychopathies d'origine génitale.) R. Schockaert.

39. Psychopathies of Gynecologic Origin.—Schockaert here reports four cases in addition to three he has previously published, in all of which correction of retroflexion of the uterus or other anomaly was followed by complete recovery from melancholia or other psychopathy from which the patient had long suffered. There was no endometritis and the adnexa seemed sound. The mental trouble can be explained by *assuming that* the displacement of the uterus started some abnormal irritation or stimuli which acted on the central nervous system by the *intermediation* of the sympathetic system, upsetting its functional balance. Convulsions may be brought on in children in the same way by a fright or anger or by an acute pain. Not merely the genital organs in women but any organic anomaly in man or woman may upset the psychic balance in the predisposed; and, on the other hand, correction of the organic anomaly may restore the psychic balance to normal. The psychopathies connected with the female genital organs were always in his experience of the type of severe melancholia, ideas of suicide and persecution or acute mania. He reiterates in conclusion that gynecologic affections often insignificant in appearance may in some cases be responsible for distressing psychopathies which in turn may be cured by removing this cause.

Semaine Médicale, Paris

July 9, XXXIII, No. 28, pp. 325-336

40 Firearm Abdominal Wounds. (Le traitement des plaies par armes à feu de l'abdomen en pratique de guerre et en pratique de paix.) F. Lejars.

July 16, No. 29, pp. 337-348

41 *Frequency of Development of Fistula during Application of Artificial Pneumothorax. L. Bard.

41. Laceration of Lung Tissue in Course of Artificial Pneumothorax. Bard presents evidence to prove that pleuropulmonary fistulas are of much more frequent occurrence in the course of injection of a gas to induce an artificial pneumothorax than has generally been recognized. But his evidence further goes to show that this complication is not dangerous enough to be regarded as contra-indicating the measure in the cases inevitably doomed without it. The fistula at first is rather an aid than the reverse, as it assists in the compression and collapse of the lung; but its ultimate results, when it persists, are far from negligible, so that it is a complication which it is better to avoid. A personal case is described to show the symptoms liable when a fistula is formed in this way. They are generally ascribed to a serous effusion and differentiation is possible usually only by measuring the pressure. The presence of a valve fistula is rendered probable by the persistence of the pressure at the same level during both phases of tranquil breathing. As long as there is an air bubble above, the fistula is probably still permeable. Every effort should be made to heal up the fistula, and the best means for this is to keep the pressure in the pleural sac above that in the lung. Pressure from a fluid in the pleural sac is not tolerated as well as pressure from a gas.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXVII, No. 2, pp. 103-290. Last indexed August 2, p. 372

42 Rosenbach's Tuberculin. K. Lesser and H. Kögel.
43 *Tuberculosis of the Thyroid. (Tuberculose der Schilddrüse.) S. Pollag.
44 Pathology and Drug Treatment of Fever in Pulmonary Tuberculosis. M. Damask.
45 Earning Capacity with Slight Pulmonary Tuberculosis. (Die Arbeitsfähigkeit der Leicht-Lungenkranken.) A. Mayer.
46 Artificial Pneumothorax at Fourth Month of Pregnancy. D. O. Kuthy and G. Lobmayer.

43. Tuberculosis of the Thyroid.—Pollag devotes thirty-six pages to a summary of the literature on tuberculous affections of the thyroid and to a detailed account of three cases he has personally encountered. The opinion used to prevail that a goiter protected against tuberculosis, and it is certainly a fact that the thyroid is only rarely invaded, even granting that many tuberculous thyroid affections may escape detection. It seems evident that the thyroid has greater power *to resist tuberculosis than other organs*, and it is possible that its iodin content may be responsible for this. The tuberculous thyroid process in itself is never fatal, but it is liable to become associated with miliary tuberculosis, meningitis or myxedema. When a sound thyroid is attacked, the process spreads more rapidly than when a tough, fibrous goiter is involved. Pollag regards the tuberculous involvement of the thyroid as *on a par with* malignant syphilis, as it indicates that the resisting powers of the organism are at a very low ebb, the Wassermann test giving a negative response as the organism is unable to produce antigens in sufficient amounts.

The treatment of thyroid tuberculosis should be on the principle of removal of the focus while sparing the sound tissue as much as possible. If symptoms follow from loss of thyroid functioning, thyroid treatment or transplantation should be considered. It seems to be now established that the toxins in cachexia thyreopriva are produced in the spleen; if this is true, the logical consequence would be the theory that splenectomy would remove the source of the toxins.

This might be considered in case of very serious phenomena from loss of thyroid functioning. Hamburger and Costa have recommended sending tuberculous patients to regions where goiter is endemic, hoping by inducing an exaggeration of thyroid functioning to exert a favorable influence on the tuberculosis elsewhere. Morin ascribes much of his success in immunization of animals against tuberculosis to feeding the animals with thyroid tissue. Biolakur and others urge the necessity for an operation on the thyroid when symptoms of exophthalmic goiter are observed in the course of pulmonary tuberculosis; improvement of both the thyroid affection and of the tuberculous process elsewhere has been known to follow an operation on the thyroid. Frugoni and Grixoni found that their tuberculous patients got along much better when they were given systematic thyroid treatment. They have also reported a case in which exophthalmic goiter retrogressed as the thyroid developed sclerosis. In one of Pollag's three cases the tuberculous abscess in the thyroid was treated with a palliative operation, as the patient was an elderly woman with a bad heart. The thyroid shriveled up afterward, amounting to a clinical cure. He suggests that it might be possible to hasten this obliterating process by injection of phenol or other caustic, or injection of bismuth paste, after the preliminary evacuation and curetting of the focus.

Berliner klinische Wochenschrift

July 7, L, No. 27, pp. 1241-1284

47 *Serodiagnosis of Pregnancy. J. Veit. (Die Serumfermentreaktion nach Abderhalden.) B. Aschner.
48 *Miliary Tuberculosis following Friedmann's Treatment. (Bericht über einen nach Friedmann behandelten Fall von Tuberkulose.) M. Westenhöfer.
49 Radium Emanations in Gout. P. G. Mesernitzki.
50 Leukocyte Inclusions. (Die Döhle'schen Leukocyteneinschlüsse.) A. Brinchmann.
51 *Dietetics in Cardiovascular Disease. (Diätetik der Herz- und Gefässkrankheiten.) H. Vaquez. Commenced in No. 26.
52 *The Movements and Attitudes in Spastic Paralysis Recall those of Climbing Animals. (Das phylogenetische Moment in der spastischen Lähmung.) O. Foerster. Commenced in No. 26.

47. **Serodiagnosis of Pregnancy.**—Veit has had the Abderhalden technics for serodiagnosis of pregnancy given thorough tests at his clinic. controlling the dialysis method by the optic technic, and his conclusions are strongly in favor of the specific nature and the reliability of the method. The findings seem to be the tangible manifestation of the presence of a placenta; the findings are positive even in non-gravid animals prepared by injections of placenta tissue. Aschner reviews further the experiences with 250 women to whom the test was applied by one or both technics. Extra-uterine and pathologic pregnancies respond positively when there is a living placenta, while the serum of non-pregnant women invariably fails to respond. In a few instances of uterine cancer and disturbance in ovarian functioning a very feeble reaction was exceptionally observed. but it never stood the control test.

48. **Miliary Tuberculosis Following Friedmann's Treatment.**—Westenhöfer relates that an American physician of means, Dr. McC., aged 32, came to Berlin with his medical attendant and Friedmann gave him an injection of his remedy. McC. was of a frail physical constitution, with general hypoplasia of the vascular system, and had pulmonary tuberculosis but he was in comparatively good condition when he arrived in Berlin, according to the testimony of his accompanying medical attendant. He was increasing in weight and was free from fever. Friedmann assured him that he would recover his health entirely, and allowed him to smoke and take evening walks although it was winter. He was picked up on the street, February 14, with fatal hemoptysis, and necropsy revealed diffuse miliary tuberculosis of not more than two weeks' standing. Westenhöfer calls attention to the fact that the site of the Friedmann injection was the seat of a pronounced miliary process. According to Friedmann's claims, this point at least should have been a region of greatest resistance. The old processes in the lungs were not of decidedly progressive nature. It is possible, Westenhöfer suggests, that the relief afforded by Friedmann's assurance that the patient would certainly completely recover may have been responsible for a more irregular mode of life than that to which he had been accustomed. Westenhöfer concludes with the remark that it is impossible to deny that the Friedmann inoculation may have induced a typical tuberculosis at the point of the injection, but it is likewise impossible to prove this. (This case and the discussion on it were summarized in the Berlin Letter, The Journal, July 5, 1913, p. 50.)

51. **Dietetic Management of Cardiovascular Disease.**—Vaquez concludes his long article with the general statements that arteriosclerosis and abnormally high blood-pressure do not require any special dietetic regulations either in treatment or prophylaxis, beyond care that the ordinary food is digested, assimilated and the waste thrown off in proper manner. With failing compensation of a valvular defect, the physician must be on the alert to detect retention in any guise. Here become necessary besides drugs to act on the heart, great moderation in the intake of fluids and reduction of the proportion of salt in the food, to ward off edema. The intake of salt must be restricted over varying periods according to the individual case, and the diet restricted to milk and vegetables, with complete repose; these measures will aid in keeping the systole normal and postpone asystolia. If compensation has been restored, the patient can be allowed to resume his usual mode of life, merely dropping from the diet articles known to be harmful to him. When the insufficiency of the heart is accompanied by advanced lesions of the kidneys, the restrictions must be more severe and be kept up longer. On a salt-free diet the attacks of cardiac asthma and of pulmonary edema become less and less frequent. The benefit was so marked in some of his cases that the patients held spontaneously to the salt-free diet for months or years or returned to it spontaneously at the first sign of impending trouble. When the kidneys are sound, meat can be eaten with the salt-free diet, but with renal lesions meat must be dropped more or less completely, as retention of urea frequently accompanies retention of salt and water. It is a more difficult matter, he adds, to combat retention of urea as it is almost impossible to exclude albumin completely from the diet without danger of inanition. Even milk contains so much albumin that attacks from retention of nitrogenous substances in the blood may be brought on even by two liters of milk a day. It is better to give less milk and combine it with fruit and vegetables; the nourishing value is low, but by varying the combinations and dishes it is possible to keep up the patient's appetite on this diet over long periods. In short, he concludes, study of the elimination of the various articles of diet must be the guide for the dietetic restrictions. It is worse than folly to forbid certain articles arbitrarily when this particular patient is able to utilize these special articles perfectly. Only those articles should be more or less completely dropped from the diet which experience and laboratory tests show the individual in question is unable to eliminate. Alcohol in all forms should be forbidden; this, he remarks, belongs more to toxicology than to dietetics.

52. **The Contracture in Spastic Paralysis.**—Foerster gives twenty-one illustrations to sustain his assertion that the contractions in spastic paralysis resemble in all points the climbing movements and grip of monkeys. The movements and contractures with spastic paralysis are a phylogenetic reminiscence of the climbing act. There is, he says, evidently a functional awakening of the subcortical centers innervating the muscles involved in the contracture, after the pyramidal tracts cease functioning.

Correspondenz-Blatt für Schweizer Aerzte, Basel

June 28, XLIII, No. 26, pp. 801-832

53 Deafmutism. (Ergebnisse der Taubstummenuntersuchungen in der Taubstummenanstalt. St. Gallen.) E. Gallusser.
54 Small-Pox. (Epidemiologisches und Experimentelles über Variola und Vakzine.) M. Tièche. Commenced in No. 21.

July 5, No. 27, pp. 833-864

55 Carbon Dioxid Snow in Therapeutics. (Ueber die Therapie mit fester Kohlensäure.) E. Sommer.

Deutsche medizinische Wochenschrift, Berlin

July 3, XXXIX, No. 27, pp. 1289-1344

56 *Purgatives and Antidiarrheics for Children. (Der Gebrauch von Abführmittel und Stopfmitteln im Kindesalter.) W. Birk.
57 *Pathogenesis of Pernicious Anemia. C. A. Ewald and E. Friedberger.
58 Motor Functioning of the Intestines. (Ueber Darmbewegung und Darmform.) G. v. Bergmann and G. Katsch.
59 Astigmatism and Myopia in the Orient. (Ergebnisse vergleichender Refraktionsuntersuchungen an höheren Schulen der Levante und Ostindiens.) F. P. Krusius.
60 *Benzol in Leukemia. (Fall von benzolbehandelter Leukämie mit eigentümlichen Verlauf.) K. Jespersen.
61 Abscess in Thyroid with Pure Cultures of Typhoid Bacilli, Twenty-One Years after Typhoid and Followed by Acute Exophthalmic Goiter. (Strumitis posttyphosa apostematosa tarda und sekundäre Basedowsche Krankheit.) G. Gall.
62 Atony of the Cecum. (Zur Diagnose der Blinddarmerschlaffung.) H. Stern.
63 Action of Gymnastics on the Circulation. (Wirkung der Heilgymnastik auf die Blutzirkulation im Lichte der Hydrodynamik.) S. Salaghi.
64 Technic for Diathermia in Joint Disease. A. E. Stein.
65 Quinin Salve in Prophylaxis of Syphilis. J. Schereschewsky.
66 *Mistake in Sex. (Erreur de sexe.) E. Zurhelle.

56. **Constipation and Diarrhea in Children.**—Birk emphasizes anew that the feeding of children with much milk, eggs, butter and meat, but scarcely any cereals, is almost certain to make them constipated on account of the lack of waste. Laxatives afford but temporary relief and leave the condition worse than before. By correcting the diet, giving vegetables, potatoes and bread, constipation will right itself. He adds that it is *not* enough to add these articles of food to the diet; they must be taken instead of milk and eggs, which must be dropped almost completely. He says that potato is better given in the form of salad than mashed. The sluggish intestines *do not* respond at once to the change in the diet, but with a little patience all is soon well. He decries particularly the use of purgatives and laxatives for infants, regarding the food in all cases, young and old, as the true source of the trouble, readily curable by correcting the diet. For infants with diarrhea, he stops all food for twenty-four hours, giving merely tea, sweetened with saccharin instead of sugar to prevent further abnormal fermentation in the bowels. The intestines are generally empty by the end of twenty-four hours and the fermentation ceases for lack of fuel. The two following days he gives *only* thin oatmeal gruel and then gradually returns to milk. Under this treatment the milder cases promptly recover, but in the severer type the fermentations commence again as soon as the former food is resumed. The children in this class usually have a history of several attacks of diarrhea, or the incorrect food has been continued notwithstanding the rebellion of the intestines. For these severe types, restriction to albumin or protein milk answers ideally the desired purpose. Thanks to its minimal sugar content, the fermentation processes get no sugar for further *fuel*, and thanks to its *high* albumin content it promotes putrefaction processes to such an *extent* that formed stools result such as otherwise are encountered only in constipated *infants*. The albumin milk or its equivalent is thus a *true* causal therapy, and experience has confirmed the theoretical premises so that it must be regarded as the ideal antidiarrheic for infants. Constipation from malnutrition owing to unsatisfactory utilization of milk is to be combatted with malted gruel; laxatives or purgatives are absolutely contra-indicated in constipation from this cause. With malnutrition from milk, the stools abound in lime soaps and the system is thus being abnormally drained of its lime. It is by no means a casual coincidence that children with "milk malnutrition" (*Milchnährschaden*) are exceptionally prone to rachitis and convulsions. He declares that when there is already an abnormal draining away of lime, to add to the drain by giving purgatives and neglecting the correction of the diet, is little better than malpractice. The most striking symptom of milk malnutrition and its consequences is the peculiar gray, dry stools, the so-called soap stools. The infant's power of tolerating cow's milk is exceptionally low in these cases, and any amount over this limit acts almost as a direct *poison*. The proportion of milk in the diet must be reduced and the deficit in calories made up by carbohydrates, and it is important to give the carbohydrates in the form of *maltose*, a malted gruel. His directions for making the gruel are to beat in 50 gm. of wheat flour in a third of a liter of milk and strain. In a second vessel 100 gm. of (Löflund's) malt soup extract is dissolved in two-thirds of a liter of water at 50 C. and heated nearly to boiling. Then the flour-milk mixture is added and the whole heated for three or five minutes.

[Ruhräh's directions for a malted gruel are to boil a tablespoon*ful of any flour desired* in a little more than a pint of water for fifteen minutes. As soon as it has cooled, a teaspoonful of a good malt extract or a teaspoonful of diastase is added. The mixture is stirred thoroughly, and may then be used in the place of ordinary barley water. Diastase preparations are made by most of the leading manufacturing chemists. Chapin suggests that a home-made decoction of malt be used in making malted gruel. His directions are as follows: A tablespoonful of malted barley-grains is put in a cup and enough cold water added to cover it—usually *two tablespoonfuls*. This is prepared in the evening *and placed in the* refrigerator over night. In the morning the water, looking like thin tea, is removed with a spoon or skimmed off and is ready for use. About a tablespoonful of this solution can be secured and is very active in diastase. It is sufficient, he says, to dextrinize a pint of gruel in ten to fifteen minutes. This should be prepared *fresh* every day.]

Birk states that the effect of the malted gruel is apparent almost at once. The stools become dark brown and there are three or four passages a day. His article on "Purges and Antidiarrheics" is thus practically equivalent to "Don't use them." Regulation of the diet is the main and the indispensable factor in treatment and renders drugs unnecessary.

57. **Pathogenesis of Pernicious Anemia.**—Ewald was unable to detect any hemolytic action in an *emulsion of the tissues* of the intestinal walls in two recent cases of fatal pernicious anemia. His research thus failed to confirm Berger's statements in regard to the presence of a lipoid hemolytic substance in the intestinal walls as the cause of pernicious anemia.

60. **Benzol in Myeloid Leukemia.**—The improvement under the benzol was marked in the case *reported*, but this patient, too, soon died after a period of uncontrollable nosebleed and vomiting.

66. **Mistaken Sex.**—Zurhelle reports another case of *erreur de sexe*, and expatiates on the folly and harm of bringing up as a *girl* a *person* with deformed male genital organs. The hardships thus wrought, the possibility of police complications, and the danger of drifting *into* suicide are abundantly illustrated in the case reported. The patient had penile-scrotal hypospadia but had been brought up as a female, had been twice married, each time to elderly widowers, and had been a "widow" for five years.

Medizinische Klinik, Berlin

July 6, IX, No. 27, pp. 1065-1104

67 Significance of the Spirochete Findings in Progressive Paralysis. (Ueber die Tragweite der Spirochätenbefunde bei progressiver Paralyse.) A. Hoche.
68 *Conservative Treatment of Streptococcus Abortion and its Results. M. Traugott.
69 *Salvarsan Intoxication and Hypersusceptibility to Arsenic. K. Brandenburg.
70 Dietary in Sanatoriums and Hospitals. (Die rationelle Einrichtung der Diätküche in Krankenhäusern und Sanatorien.) A. Schmidt.
71 The Gall-Bladder and the Chemistry of the Stomach. (Gallenblase und Magenchemismus.) G. Magnus.
72 Swelling of the Preauricular Lymph-Nodes as Sign of Stye. (Ein klinisch wenig beachtetes Symptom beim Hordeolum externum.) M. Bondi.
73 *Comparative* Influence of Water, Carbonated and Mud Baths on the Temperature. R. Schmincke.
74 The Wassermann Reaction in Blister Serum. (Experimentelle Beobachtungen über die Wassermannsche Reaktion im Inhalte von Cantharidenblasen.) A. Buschke and E. Zimmermann.
75 Serodiagnosis of Pregnancy. (Beiträge zu Abderhaldens Serodiagnostik.) Evler. Commenced in No. 26.

68. **Conservative Treatment of Streptococcus Abortion.**—Traugott commends the method of treating abortion which has proved its usefulness in hundreds of cases at the Frankfurt clinic for women. It is based *on the* discovery that certain germs in the uterus, colon bacilli, non-liquefying staphylococci;

This might be considered *in case of very serious phenomena from loss of thyroid functioning.* Hamburger and Costa have recommended sending tuberculous *patients to regions* where goiter is endemic, hoping by inducing an exaggeration of thyroid functioning to exert a favorable influence on the tuberculosis elsewhere. Morin ascribes much of his success in *immunization of animals against tuberculosis to feeding* the animals with thyroid tissue. Biolakur and others urge the necessity for an operation on the thyroid when symptoms of exophthalmic goiter are observed in the course of pulmonary tuberculosis; improvement of both the thyroid affection and of the tuberculous process elsewhere has been known to follow an operation on the thyroid. Frugoni and Grixoni found that their tuberculous patients got along much better when they were *given systematic thyroid treatment.* They have also reported a case in which exophthalmic goiter *retrogressed* as the thyroid developed sclerosis. In one of Pollag's three cases the tuberculous abscess in the thyroid was treated with a palliative operation, as the patient was an elderly woman with a bad heart. The *thyroid shriveled up afterward,* amounting to a clinical cure. He suggests that it might be possible to hasten this obliterating process by injection of phenol or other caustic, or *injection* of bismuth paste, after the *preliminary evacuation* and curetting of the focus.

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50 Leukocyte Inclusions. (Die Döhle'schen Leukocyteneinschlüsse.) A. Brinchmann.
51 *Dietetics in Cardiovascular Disease. (*Diätetik der Herz- und* Gefässkrankheiten.) H. Vaquez. Commenced in No. 26.
52 *The Movements and Attitudes in Spastic Paralysis Recall those of Climbing Animals. (Das phylogenetische Moment in der spastischen Lähmung.) O. Foerster. Commenced in No. 26.

47. **Serodiagnosis of Pregnancy.**—Veit has had the Abderhalden technics for serodiagnosis of pregnancy given thorough tests at his clinic, controlling the dialysis method by the optic technic, and his conclusions are strongly in favor of the specific nature and the reliability of the method. The findings seem to be the *tangible manifestation* of the presence of a placenta; the findings are positive even in non-gravid animals prepared by injections of placenta tissue. Aschner reviews further the experiences with 250 women to whom the test was applied by one or both technics. Extra-uterine and pathologic pregnancies respond positively when there is a living placenta, while the serum of non-pregnant women invariably fails to respond. In a few instances of uterine cancer and disturbance in ovarian functioning a very feeble reaction was *exceptionally* observed, but it never stood the control test.

48. **Miliary Tuberculosis Following Friedmann's Treatment.**—Westenhöfer relates that an American physician of means, Dr. McC., aged 32, came to Berlin with his medical attendant and Friedmann gave him an *injection* of his remedy. McC. was of a frail physical constitution, with general hypoplasia of the vascular system, and had pulmonary tuberculosis but he was in comparatively good condition when he arrived in Berlin, according to the testimony of his accompanying medical attendant. He was increasing in weight and was free from fever. Friedmann assured him that he would recover his health entirely, and allowed him to smoke and take evening walks although it was winter. He was picked up *on the* street, February 14, with fatal hemoptysis, and necropsy revealed diffuse miliary tuberculosis of not more than two weeks' standing. Westenhöfer calls attention to the fact that the site of the Friedmann injection was the seat *of a* pronounced miliary process. According to Friedmann's claims, this point at least should have been a region of greatest resistance. The old processes in the lungs were not of decidedly progressive nature. It is possible, Westenhöfer suggests, that the relief afforded by Friedmann's assurance that the patient would certainly completely recover may have been responsible for a more irregular mode of life than that to which he had been accustomed. Westenhöfer concludes with the remark that it is impossible to deny that the Friedmann inoculation may have induced a typical tuberculosis at the point of the injection, but it is likewise impossible to prove this. (*This case and the discussion on it* were summarized in the Berlin Letter, The Journal, July 5, 1913, p. 50.)

51. **Dietetic Management of Cardiovascular Disease.**—Vaquez concludes his long article with the general statements that arteriosclerosis and abnormally high blood-pressure do not *require any special dietetic regulations* either in treatment or prophylaxis, beyond care that the ordinary food is digested, assimilated and the waste thrown off in proper manner. With failing compensation of a valvular defect, the physician must be *on the alert* to detect retention in any guise. Here become necessary besides drugs to act on the heart, *great moderation* in the intake of fluids and reduction of the proportion of salt in the food, to ward off edema. The intake of salt must be restricted over varying periods according to the individual case, and the diet restricted to milk and vegetables, *with* complete repose; these measures will aid in keeping the systole normal and postpone asystolia. If compensation has been restored, the patient can be allowed to resume his usual mode of life, *merely dropping from* the diet articles *known to* be harmful to him. When the insufficiency of the heart is accompanied by advanced lesions of the kidneys, the restrictions must be more severe and be kept up longer. On a *salt-free diet* the attacks *of cardiac asthma and of pulmonary* edema become less and less frequent. The benefit was so marked in some of his cases that the patients held spontaneously to the salt-free diet for months or years or returned *to it spontaneously at the first sign of impending* trouble. When the kidneys are sound, meat can be eaten with the salt-free diet, but with renal lesions meat must be dropped more or less completely, as retention of urea frequently accompanies retention of salt and water. It is *a more* difficult matter, he adds, to combat retention of urea as it is almost impossible to exclude albumin completely from the diet without danger of inanition. Even milk contains so much *albumin* that *attacks from retention of* nitrogenous substances in the blood may be brought on even by two liters of milk a day. It is better to give less milk and combine it with fruit and vegetables; the nourishing value is low, but by varying the combinations *and dishes it is possible* to keep up the *patient's* appetite on this diet over long periods. In short, he concludes, study of the elimination of the various articles of diet must be the guide for the dietetic restrictions. It is worse than folly to forbid certain articles arbitrarily when this particular *patient* is able to utilize these special *articles perfectly.* Only those articles should be more or less completely dropped from the diet which experience and laboratory tests show the individual in question is unable *to* eliminate. Alcohol in *all forms* should be forbidden; this, he remarks, belongs more *to* toxicology than to dietetics.

52. **The Contracture in Spastic Paralysis.**—Foerster gives twenty-one illustrations to sustain his assertion that the contractions in spastic paralysis resemble in all points the climbing movements and grip of *monkeys.* The movements and contractures with spastic paralysis are a phylogenetic reminiscence of the climbing act. There is, he says, evidently a functional awakening of the subcortical centers *innervating* the muscles involved in the contracture, after the pyramidal tracts cease *functioning.*

Correspondenz-Blatt für Schweizer *Aerzte,* Basel

June 28, XLIII, No. 26, pp. 801-832

53 Deafmutism. (Ergebnisse der Taubstummenuntersuchungen in der Taubstummenanstalt. St. Gallen.) E. Gallusser.
54 Small-Pox. (Epidemiologisches und Experimentelles über Variola und Vakzine.) M. Tièche. Commenced in No. 24.

July 5, No. 27, pp. 833-864

55 Carbon Dioxid Snow in Therapeutics. (Ueber die Therapie *mit fester* Kohlensäure.) E. Sommer.

ably spreading through the lymphatics to the peritoneal and pleural side of the diaphragm. The lungs may be secondarily affected or may suffer from mechanical conditions. In one case the signs and symptoms suggested pneumonia, puerperal fever, appendicitis and pyelitis, all at once, but the diagnosis finally narrowed down to the latter alone.

86. **Spasm-Producing Action of Potassium.**—Lust writes from the university clinic at Heidelberg in charge of Moro to relate a case of tetany following on a severe gastro-intestinal disturbance in a child of 2. The remarkable feature of the case was that the tetany came on regularly when there was marked retention of water, and it subsided with this. He thinks it is evident that the tetany was due to substances retained in and with the water, and everything seems to point to the potassium salts in the water as the substances to be incriminated. He is inclined to believe that potassium and sodium salts have a direct spasm-producing influence while lime has the opposite effect, reducing the tendency to spasms. The sodium and still more the potassium salts display their spasmogenic influence sometimes in doses no higher than the proportions of these salts usually present in milk.

90. **Rinsing Out the Kidney Pelvis in Treatment of Pyelitis.**—Hohlweg declares that this method of treating pyelitis ensures in nearly every case not only a clinical but a bacteriologic cure and thus permanent recovery. The outcome is naturally better the earlier the treatment is begun. He always uses for the rinsing fluid a solution of silver nitrate, gradually increasing the strength from a 1 or 2 per thousand to a 0.5 or 1 per cent. solution. The toleration varies with the patients: some complain of pain with the weaker, others not even with the stronger solutions. He usually applies the measure two or three times a week and the cure is generally complete in two or three weeks. Fifteen of his seventeen patients were thus completely cured and reexamination of twelve after an interval of six weeks to two and a half years shows that the cure was permanent. In only two of the total cases was it found impossible to realize a bacteriologic cure, and it proved later that the primary focus was in another organ in these cases.

Therapeutische Monatshefte, Berlin

July, XXVII, No. 7, pp. 469-548

91 *Roentgenotherapy in Gynecology. A. Hamm.
92 Subcutaneous Digitalis Treatment. E. F. Zurhelle.
93 Hypophysis Treatment in Rachitis: 16 Cases. K. Welss.
94 The Amins and the Intermediary Metabolism. (Proteinogene Amine.) M. Guggenheim.
95 *Necessity for Greater Care in Prescriptions in Regard to Doses. (Sorgfältigere Abfassung ärztlicher Verordnungen von starkwirkenden Arzneimitteln.) W. Heubner.
96 *Reform in Advertising of Medicinal Preparations. (Zur Bekämpfung der falschen Deklaration der Arzneimittel und des Reklamenunwesens.) W. Heubner.
97 *Is the Advertising of Medicinal Preparations Necessary? (Die Bedeutung der Inserate in der Medizinischen Fachpresse.) W. Heubner.

91. **Radiotherapy in Gynecology.**—Hamm remarks that not even the brilliant successes of surgery have rid the public of the universal dread of operations, and consequently the new era of intensive and filtered dosage of the Roentgen rays seems to open new fields, especially in gynecology, if the reports from the Freiburg clinic are confirmed by the experience of others, and if we can learn to manage the rays as understandingly and as securely as we now use the scalpel. It is asserted from Freiburg (Gauss) that with the new technic it is possible to cure every patient with a myoma in five weeks, regardless of the woman's age or the size of the myoma. Krönig affirms that sarcomas retrogress under the rays even quicker than myomas. The improvements in the technic consist mainly in the exclusive use of hard rays, filtered through a sheet of aluminum 3 mm. thick, the tube only 20 cm. distant, and the rays sent from as many different points as possible on the "cross-fire principle." There has been no ray burn since this technic has been ap

experiments with plant seedlings have confi

greater destructive action of the hard rays on

The only by-effects he has observed with the new technic are the occasional "*Roentgenkater*," headache and nausea, persisting for from one to four days after the exposure. Hamm rejects radiotherapy for all gynecologic affections except myomas and hemorrhagic uterine disease. And with these he advocates operative measures by preference if it is possible with enucleation to retain the genital function of the uterus, or if the myoma is pedunculated and projects from the cervix, or there is suspicion of gangrene or of a mucosa carcinoma or of sarcomatous degeneration of the myomas suggested by its rapid growth, hemorrhages and the lack of prompt influence from the Roentgen rays; also if the myoma has entailed acute incarceration of the bladder. Hamm tabulates the outcome with radiotherapy as reported from five large clinics, the successes ranging from 63 to 76.3 per cent., but the Freiburg clinic reports twenty-one cases of hemorrhagic metropathy with 100 per cent. cures, and seventy-nine cases of myoma with 100 per cent. cures since the new technic has been applied. Kraurosis vulvae yielded in one of Hamm's cases to treatment with ovarian extract. The attempt to sterilize a woman by means of Roentgen exposures is dangerous, he thinks, although it has proved effectual on animals and has been proposed as a harmless method of interrupting the pregnancy in a tuberculous woman. Gauss makes such patients sign a certificate that in case the attempt fails they will apply to a physician for an instrumental abortion as otherwise they might sue him for damages in case a deformed child should be born.

95. **More Care in Prescribing.**—The German authorities have recently issued a warning to physicians that the directions for the use of a potent drug prescribed must be written on the prescription. It is found to be a frequent custom for a physician to prescribe, for instance, 25 c.c. of sodium salicylate or one tablet mercuric chlorid, and give the patient merely verbal instructions how to use them—the patient was directed verbally to separate the salicylate into twenty-five equal parts and take half of this dose at certain intervals; the tablet of the chlorid was ordered to be dissolved in a beer bottle of vinegar. The authorities in their warning emphasize the danger of trusting to the memory or the intelligence of patients to carry out such verbal instructions. No decree was issued as they believe that an informal warning will put an end to the dangerous custom.

96-97. **Reform in Advertising of Medicinal Preparations.**—A pharmacist has recently published an appeal to have an expert pharmacist appointed as a government official inspector of establishments where drugs are manufactured so that the preparation of medicinal articles will be under his direct control at all times. The editor of the *Monatshefte* does not think this is practical, and points to the work of the Council on Pharmacy and Chemistry of the American Medical Association to show what can be effectively accomplished by other and wiser means.

The editor also comments with amusement on the hue-and-cry raised in regard to the "fundamental importance" of the advertising of medicinal preparations in the medical press, apropos of the recent denunciation to the authorities of medical journals which carry advertisements of drugs the publishing of which "to the public" is against the law. The matter was laughed out of court (see page 71 of The Journal, July 5, 1913), but the protests seemed to indicate that without the advertisements in the medical press, the members of the profession would be left entirely ignorant of the progress of scientific pharmacy. On the other hand, here comes a protest in a Vienna medical weekly against the "Accepted List of Medicinal Preparations" published by the German Kongress für Innere Medizin, the protest stating that such a list and the "acceptance" of medicinal articles by any council or the like are a disgrace and humiliation for the members of the profession a, indicating that physicians rely exclusively on the

e advertisements to guide them in the

practice.

t is merely. "Which is right?" (*Wer*

Virchows Archiv, Berlin

June, CCXII, No. 3, pp. 321-476

98 Involution forms of Gonococcus. (Ueber die Involutionsformen des Gonokokkus Neisser und ihre Rolle als intraepitheliale Zellparasiten.) H. Herzog. Commenced in No. 2.
99 Concretions in the Thyroid. (Zur Kenntnis der Sphärolithe in der Schilddrüse.) E. J. Kraus.
100 Endothelial Sarcoma of the Skin. L. Martinotti.
101 Granuloma Simulating Lymphoma. (Ueber ein plasmazelluläres Granulom.) M. Kusunoki and Frank.
102 Heart Changes in Pertussis. M. Brick.
103 Anatomic Changes in Osteogenesis Imperfecta. C. Kardamatis.
104 Connection between Arteriosclerotic Contracted Kidney and Chronic Interstitial Nephritis. (Beziehungen der sogen. arteriosklerotischen Schrumpfniere zum Morbus Brightii.) R. Friedländer.
105 Changes in the Leukocytes in Rabbits under Influence of Staphylococcus Infection. (Ueber die Leukozytenveränderungen bei Kaninchen unter dem Einfluss verschieden virulenter Staphylokokkenkulturen.) W. J. Glintschikoff.
106 Experimental Myocarditis. L. Loeb.

Wiener klinische Wochenschrift, Vienna

July 3, XXVI, No. 27, pp. 1101-1148

107 *Syphilis of the Kidney. (Weitere Erfahrungen über luetische und postluetische Erkrankungen der Niere.) R. Bauer and P. Habetin.
108 Serodiagnosis. (Nachweis organabbauender Fermente im Serum mittels des Abderhaldenschen Dialysierverfahrens.) J. Bauer.
109 Growth-Inhibiting Influence of the Spleen on Rat Sarcoma. (Ueber den wachstumshemmenden Einfluss der Milz auf das Rattensarkom.) P. Biach and O. Weltmann.
110 Comparative Serodiagnosis. (Vergleichende Untersuchungen über die Meiostagmin-Reaktionsfähigkeit der Extrakte verschiedener Dotterarten mit menschlichen Karzinomseris.) G. Kelling.
111 Differentiation of Acid-Fast Bacteria. (Kaltblüter-Tuberkelbazillus.) H. Dostal and F. Ender.

July 10, No. 28, pp. 1149-1192

112 Abnormal Interval between Systole and Pulse. (Experimentelle Untersuchungen über die Pulsverspätung.) E. Hoke and J. Rihl.
113 Extraction of Bullet from Third Ventricle; Death from Hemorrhage. A. Exner and J. P. Karplus.
114 *Bile Peritonitis. R. Vogel.
115 The Langerhans Islands in the Pancreas. J. K. Else.
116 Alimentary Levulosuria with Chronic Nephritis. M. Franke.
117 *Antiphlogistic Action of Subcutaneous Injection of Epinephrin. (Entzündungswidrige Wirkung subkutaner Adrenalininjektionen.) H. Januschke.
118 From the Campaign in Manchuria. (Erinnerungen aus dem Russisch-japanischen Kriege.) P. Bergengruen.

107. **Syphilitic Disease of the Kidneys.**—Bauer and Habetin declare that syphilis is responsible in a certain proportion of cases of kidney disease, and that prompt antisyphilitic measures in time would cure the kidney trouble. It is still a question whether the kidneys suffer from the action of the spirochete toxins or whether the spirochetes locate directly in these organs. The clinical picture, however, is characteristic, as they show by nine cases reported in detail. As a rule, the course is comparatively benign and chronic, with pronounced albuminuria and polyuria but no changes in the circulatory apparatus and only slight signs of uremia. In three of their cases, however, the affection developed suddenly as a severe, acute, hemorrhagic nephritis with uremia. The early appearance of the symptoms of uremia is particularly characteristic of this early syphilitic nephritis in the secondary stage of syphilis. The course in the three cases of this type was different in each: In one the nephritis subsided abruptly in an incredibly short time without treatment; by the end of ten days all was apparently in order again. In the second case the kidney trouble subsided after a stormy phase into a subchronic stage. The third case was under observation for ten years: first there was an acute hemorrhagic nephritis in the secondary stage of syphilis; this then subsided and after six years a syphilitic liver trouble predominated in the clinical picture. The findings in the kidneys now are merely high albuminuria without cardiovascular symptoms or abnormally high blood-pressure, but with occasional exacerbations of the kidney trouble with uremic symptoms and dropsy. This type corresponds to what Dieulafoy called generalized syphilitic amyloidosis. In six of the total nine cases encountered the kidney trouble had developed insidiously without anything at first to indicate nephritis. The Wassermann test is always unusually pronounced in these cases. There does not seem to be much hope of successful treatment in the old chronic cases with an insidious development; the prospects are much better in the cases with an acute onset, both at the time and later. Vorpahl has reported a case in which acute nephritis and a gumma in the tonsil developed the thirteenth year after infection with syphilis and both were cured by specific treatment. It is dangerous, however, to go to the extreme of starting specific treatment in every case of nephritis in a syphilitic. Thiroloix has reported a case of chronic nephritis in an old syphilitic; severe hematuria followed the second mercurial inunction and the patient died notwithstanding the kidney was immediately decapsulated, which usually has a favorable effect on the ordinary congestive exacerbations in nephritis. The Wassermann reaction was positive in the urine in five out of the nine cases here reported, and was positive in all when applied to the globulin fraction of the urine.

114. **Bile Peritonitis.**—Vogel's analysis of the literature on this subject and his own experimental research have convinced him that there is always some perforation of the biliary passages which is responsible for bile peritonitis. It cannot occur without perforation.

117. **Inflammation-Inhibiting Action of Epinephrin and the Salicylates.**—Januschke calls attention to recent research by Gaisböck and others, the results of which have confirmed the view that the benefit from certain drugs in treatment of acute articular rheumatism and other inflammatory processes is due to their elective inhibition of the peripheral nerve impulses from the focus of inflammation. The antiphlogistics act by interrupting the reflex arc from the inflammatory focus. Epinephrin acts in this respect the same as the antineuralgics. Subcutaneous injection of morphin, quinin, antipyrin, sodium salicylate, epinephrin, calcium chlorid or magnesium chlorid, all had the same effect in his experimental research, breaking into the reflex arc and thus preventing or attenuating the inflammatory secretion which otherwise follows instillation of mustard oil into the rabbit eye.

Zentralblatt für Chirurgie, Leipsic

July 12, XL, No. 28, pp. 1097-1136, with Supplement, pp. 1-112

119 Operation for Gastric Cancer Adherent to the Colon. (Die Magenkolonresektion, eine typische Operation bei bestimmten Formen von Magenkarzinom.) G. Perthes.
120 Plastic Operation on Fractured Skull. (Zur Schädelplastik bei Depressionsfrakturen.) A. Hoffmann.
121 Technic for Suprapubic Prostatectomy. Jenckel.
122 Paralysis of Phrenic Nerve after Local Anesthesia of Brachial Plexus. F. Brunner.
123 Transactions of Annual Meeting of German Surgical Association.

Zentralblatt für Gynäkologie, Leipsic

July 12, XXXVII, No. 28, pp. 1029-1060

124 *Massage of Pregnant Uterus. A. Sippel.
125 *Successful Ovarian Treatment of Old Acromegaly. (Schwangerschaft nach Akromegalie.) L. Kalledey.

124. **Danger of Massage of the Pregnant Uterus.**—Sippel was recently summoned as expert in a case in which abortion had followed repeated vigorous massage of the two-months pregnant uterus by a quack, "to stimulate the bowel functioning and improve the general health." Sippel stated that massage of the pregnant uterus was always wrong and might or might not bring on abortion. The lawyer presented for the defense a page in Hoffa's Manual of Massage in which it is stated that cautious massage may avert an impending abortion. Sippel's comment was that while Hoffa was an eminent orthopedist, evidently his judgment in gynecologic matters could not be accepted as dependable. Sippel calls attention to the case to warn others against Hoffa's statement.

125. **Success of Ovarian Treatment in Acromegaly.**—Kalledey reports a case in which the clinical picture of acromegaly gradually developed, commencing at the age of 22. He was consulted when the woman was 32, and he ascribed to defective ovarian functioning and excessive hypophysis functioning the symptoms observed, especially the oligomenorrhea, dysmenorrhea, amenorrhea and acromegaly. The indications were consequently to supplement the ovarian functioning by administration of ovarian extract. This counteracted the excess of

pituitary hormones and the woman was cured in three months and an apparently normal pregnancy followed. Pregnancy acromegaly subsides spontaneously after delivery without fail as the ovaries resume their functioning, and he sought to follow Nature's method by supplying the lacking ovarian products. His success shows that acromegaly outside of pregnancy may be curable in this way. He knows of no other instance of the cure of acromegaly on record.

Zentralblatt für innere Medizin, Leipsic

July 12, XXXIV, No. 28, pp. 705-728

126 *Acute Exophthalmic Goiter. (Ueber akute Morbus Basedowii.) R. V. Funke.

126. **Acute Exophthalmic Goiter.**—Funke's four patients with acute exophthalmic goiter had only two constant symptoms, the tachycardia and the rapid and excessive loss of weight; in no other disease does the patient lose so rapidly in weight—in a case of Schlesinger's, 122 pounds in eleven weeks, and one of Funke's patients, 48 pounds in a few days, another 110 pounds in a few months. There was no enlargement of the thyroid in two cases and none in the beginning in another case in which later a large goiter developed. The tachycardia was constant and in some became a perpetual irregular arhythmia; the blood-pressure also ran up extremely high and in one of the cases has persisted high although there is nothing to indicate kidney disease. Fever of a remittent type was occasionally observed, especially in a case accompanied by motor disturbances resembling the severest type of chorea, persisting for some time after subsidence of the other symptoms. In addition to the clonic spasms in this case there was also contracture of the hands, suggesting tetany. The onset of trouble in one case simulated severe gastro-intestinal poisoning. All the cases improved in time to a condition which amounts to a clinical cure. Treatment was hygienic-dietetic with complete rest, kept up for a long time, supplemented later by mild hydrotherapy. He does not approve of operative measures in acute exophthalmic goiter but advocates it later, when the affection has subsided into a more chronic type and the patient is stronger. His patients were two girls of 16, a woman of 35 (whose mother had had exophthalmic goiter late in life and had recovered), and a robust man of 32 who had acquired extragenital syphilis. After an injection of salvarsan, nephritis developed with a severe infection of the left arm. The emotional stress of these occurrences was soon followed by development of tachycardia, enlargement of the thyroid and exophhalmos, while the weight dropped from 87 to 68 kg. Under eatment the tachycardia and struma subsided, but six onths after the onset of the trouble, now, the pulse is still . but the patient feels quite well and attends regularly business.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 6, XXXIV, No. 80, pp. 823-838

127 Intoxication from Inhalation of Turpentine, etc., in Varnish. (Intossicazioni per i solventi delle vernici.) G. Porrini.

July 10, No. 82, pp. 847-854

28 The Proteolytic Ferment in the Feces in Connection with Disease of the Pancreas. (Nuovi casi di affezioni pancreatiche studiate in rapporto al potere proteolitico fecale.) A. Barlocco.

Policlinico, Rome

July 6, XX, No. 27, pp. 953-988

129 *Subcutaneous Injection of Phenol in Treatment of Tetanus. (La cura del tetano col metodo Baccelli.) V. Ascoli.

July, Surgical Section No. 7, pp. 289-336

30 *Bone Cysts. (Sulle cosidette cisti ossee.) G. Perez. Commenced in Vol. XIX.

1 The Toxins of the Streptothrix. F. Purpura.

2 Extraction of Bean in Infant's Trachea. (Voluminoso corpo estraneo nelle vie aeree; estrazione colla tracheotomia, guarigione.) A. Cantilena and G. Stretti.

133 Serodiagnosis of Echinococcus Disease. (Gli antigeni per la prova dello storno del complemento nell'echinococcosi.) G. Mazzantini.

129. **Subcutaneous Injection of Phenol in Treatment of Tetanus.**—Seven cases are reported in detail in which tetanus developing after an incubation of from four to six days was treated with subcutaneous injections of a 3 per cent. solution of phenol (carbolic acid) and the patients promptly recovered. (In one case alone the incubation had been fourteen or fifteen days.) Ascoli comments editorially on the efficacy of this method, introduced by Baccelli, and states that its very simplicity has cooperated in preventing its wider adoption; people put more faith in things that are more mysterious and harder to obtain than a simple 3 per cent. solution of phenol. Another reason why it is not more widely used is because those who have applied it have not dared to administer the proper doses but have restricted the dosage to 0.05 or 0.1 gm., while Baccelli insists on large doses, commencing with 0.2 or 0.3 gm. and increasing to 0.8 or 1 gm. per day. Any dosage less than this should not be called the Baccelli method. The seven cases here compiled are from the experience of six clinicians, including the Russian, Gulaew of Kazan.

130. **Osseous Cysts in the Bones.**—Perez' long article is based on a personal case and comparative analysis of the numerous cases on record of cystic degeneration of the bones, solitary bone cysts, fibrous ostitis, etc. He thinks that we must distinguish three clinical forms of the process, the generalized form described by Recklinghausen, the form of localized fibrous ostitis, and the form manifested by a simple pseudocyst. His case was of the latter type and he presents evidence to show that various causes may contribute to this affection: toxic, infectious, trophic or metabolic influences may be concerned in its production, but it is not known to develop except in the young, and the course is benign. The onset is so insidious that the affection may escape detection until the bone fractures. Roentgenoscopy shows a peculiarly light, sharply circumscribed patch and the slow growth excludes malignant disease. Another feature of the cysts or pseudocysts is that there may be periods of improvement or even retrogression. Echinococcus cysts generally prefer the flat and short bones and, if they locate in the long bones, it is generally in the upper part of the tibia and lower part of the femur, while the cysts are generally in the epiphysis of a long bone or near it. A process of tuberculous or other inflammatory nature is excluded by the lack of any reaction in the tissues around, and by the cylindrical or spindle-shaped enlargement of the whole of the bone. Fibrous ostitis generally affects adults and involves one or more segments of the shaft. Medicinal and general treatment is of little use except as adjuvants. Schroth has reported good effects in a case of Recklinghausen's disease from lime and Roentgen exposures of the ovaries. Excision of the diseased tissues is the radical and logical treatment, curetting the focus and removing all degenerated tissues around. The cavity left fills up with healthy granulations as a rule, with ultimate complete consolidation, even when merely a thin shell of bone was left. The mutilating operations are unjustified unless the cortex of the bone is degenerated beyond repair.

Riforma Medica, Naples

June 28, XXIX, No. 26, pp. 701-728

134 Yoghurt. (Ricerche sul latte acido coagulato—Yoghurt—consumato a Tripoli.) A. Ilvento.

July 5, No. 27, pp. 729-756

135 *Vaccination against Tuberculosis. E. Maragliano. Commenced in No. 26.

136 Relation between the Toxic Action on the Blood and the Virulence of Streptococci. (Sul rapporto tra il potere emotossico e virulenza degli streptococchi.) R. De Martino.

135. **Vaccination against Tuberculosis.**—Maragliano appeals to practitioners, chiefs of hospitals, governments and friends of humanity everywhere to heed this report of his success in vaccinating against tuberculosis. He has been engaged in research in this line since 1895, as THE JOURNAL has mentioned from time to time. He has always insisted that immunization is the work of the toxins, not of the living bacilli, and consequently that vaccination should be done with killed bacilli and by the subcutaneous route. Others came around to these views later. He further insists that it is impossible to realize an absolute immunity by this or any means to date against tuberculosis or any infection; the

immunization can be only relative until this ideal is finally reached. His aim was to produce a vaccine which could be used to immunize those particularly exposed to tuberculosis, the vaccination to be by the same *simple technic as for vaccination* against small-pox. The results of his experimental work have been uniformly conclusive as to the efficacy of the vaccination. *Rabbits and guinea-pigs* vaccinated by the same technic as *for man presented the same* local reaction in the form of a *pustule* and *general phenomena* as in clinical cases; *the leukocytes* ran up from about *5,500 to* 12,500; the polynuclear neutrophils in particular increased in numbers continuously for two weeks; the opsonic index, after a drop at first, increased from 0.80 to 2.11, in some of the animals, the agglutinating power increased from zero to 250; the precipitating power also increased, and antibodies *appeared in* the serum inducing deviation of complement in the biologic tests. Animals thus vaccinated were inoculated after two or three months with the minimal intravenous dose which kills control animals in ten or twelve weeks, and none of the vaccinated animals developed the disease. The same results were obtained in the clinic in regard to the opsonic *index*, agglutinins, *precipitins*, leukocytes, etc., but of *course* the *supreme* test of intentional inoculation with virulent bacilli *cannot be applied to human beings*. However, the persons he has vaccinated were selected for the purpose as being exceptionally exposed to tuberculosis, *living* with tuberculous *members* of the family or with an inherited tuberculous taint or caring for tuberculous individuals. As to the duration of the immunization, *nothing is known* as yet except that the *stigmata of immunization*, as he calls the change in the opsonic index, agglutinating and precipitating power, have persisted unimpaired in the individuals reexamined years later. He gives charts showing these findings in a few persons vaccinated from four to six years ago. He has been able to keep track of only 465 persons vaccinated between 1903 and 1910 in families that had been previously decimated with tuberculosis and not one of the vaccinated has since showed signs of *any* tuberculous *affection*. It has been impossible to keep the other hundreds *under control*. More instructive than the total figures are some *family groups: In one group of ten* families the parents are healthy but one or more of the children have pronounced tuberculosis. The other child or children were vaccinated from four to six years ago and all of the vaccinated are in good health to-day. In another group of eight families one of the parents was tuberculous and the two to five children were vaccinated, 1907-1909, and all are in good health to date; in one instance the father was *tuberculous and had had* five close relatives die of tuberculosis. In another group of eleven families from one to seven children had already died of tuberculosis when the surviving children were vaccinated, *1907-1909, and all of the vaccinated* are in good health to date.

He cites others who have had similarly good results with the vaccination. The experiences to date are particularly instructive, he emphasizes, because the method has been applied *only* to the children of the poor, with no extraneous factors to aid in warding off tuberculosis. The environment was the same as before the vaccination.

He prepares *the vaccine from* cultures of virulent human bacilli, killed by heating to 80 C. for an hour on three successive days, which leaves the toxicity unimpaired. The dead bacilli are triturated in an agate mortar and mixed with two parts of *glycerin*, *when the* vaccine is ready to use. It can be made in any *laboratory* and applied by the Jenner technic, but he usually applies it with a grooved needle, puncturing the skin at three points in *the* deltoid region or in Scarpa's triangle in the thigh. Experience has *shown* that in this as in other infections a very small amount *of the* vaccine answers the desired purpose. He reaffirms *in conclusion* that all his and others' experience has confirmed the absolute harmlessness of the procedure with this technic, and he warns against the intravenous route. He also reiterates that the immunization protects only against a *proportional dose* of infection. The vaccinated animals contract tuberculosis, like the controls, when inoculated with massive doses

Brazil-Medico, Rio de Janeiro

June 15, XXVII, No. 23, pp. 225-236

137 Biology of the Trypanosoma Cruzi. (Revisão do cyclo evolutivo do Trypanozoma Cruzi.) C. Chagas.

138 Serodiagnosis of Chagas' Trypanosomiasis. (Da reacção de Bordet e Gengou na molestia de Carlos Chagas como elemento diagnostico.) C. Guerreiro and A. Machado.

June 22, No. 24, pp. 237-248

139 *Negro's Sign in Peripheral Facial Paralysis. A. de Castro.

139. **Negro's Sign in Facial Paralysis.**—De Castro has found this sign constantly present in every case of peripheral facial paralysis. Negro called it the bulbo-palpebral hyperkinetic phenomenon, as it consists in the exaggerated position assumed by the eyeball when the patient is told to look up as high as he can. The eyeball on the side of the paralysis swings farther up than on the sound side, and *in* case both eyes are affected the phenomenon *occurs* on the side in which the paralysis is most severe.

Semana Medica, Buenos Aires

June 12, XX, No. 24, pp. 1357-1412

140 Diabetes. (A proposito de un caso de diabetes glicosurica.) J. R. Goyena.

141 Diathermia. *(La calefaccion electricā. El termofilo electrico* y sus aplicaciones higienicas y medicas.) V. Delfino.

142 Astigmatism. *(Nota* clinica sobre la correction subjetiva del astigmatismo.) R. Valero.

June 19, No. 25, pp. 1413-1476

143 Obstetric Version. (La maniobra de Wigand.) J. C. R. Dominguez.

144 Toxic Action of Aberrant Bile in Pulmonary Tuberculosis. (El papel intoxicante de la bilis en la tuberculosis pulmonar.) P. Serph. A. and A. Mary.

145 The Temperance Campaign in Argentina. (La campaña contra el alcoholismo en la Republica Argentina.) V. Delfino.

Hospitalstidende, Copenhagen

July 9, LVI, No. 28, pp. 769-796

146 Tertiary Syphilis with negative Wassermann Reaction. S and J. Nordentoft.

Hygiea, Stockholm

May, LXXV, No. 5, pp. 417-512

147 Variola in Stockholm; 36 Cases. (Iakttagelser ved smittkoppsepidemie i Stockholm 1913.) A. Leire.

148 Advantages of the *Two-Route Treatment* of Non-Tuberculous Infectious Processes. (Erfarenheter af sårbehandling med den Pfannenstillska metoden på icke tuberkulösa affektioner.) A. Reuterskiöld.

149 Topography of Cortex of Cerebellum. (Om lokalisation i *lillbjärnshemisfärernas bark hos människan.)* R. Barany.

150 *Improved Technic for Access to the Hypophysis. (Om transnasala hypophysis-operationer.)* G. Holmgren.

151 The Leukocytes and the Viscosity of the Blood. *(Om de* hvita blodkropparnas betydelse *för* blodviscositeten.) A. Gullbring.

Ugeskrift for Læger, Copenhagen

July 3, LXXV, No. 27, pp. 1149-1182

152 **By-Effects of Luminal. E. Blichert.*

152. **By-Effects of Luminal.**—Blichert states that in five of the thirteen cases in which he administered this *new* hypnotic drug, signs of intoxication were evident; in two no effect was observed. In six the drug had the anticipated action without by-effects, but in one case after two weeks and in four earlier there were unmistakable signs of toxic action. In three in the *latter group the* luminal had no therapeutic influence at all. *He cites communications* in German literature in regard to a *toxic action from luminal:* Eder had two cases of a luminal *eruption in 150 and Graeffner* two in seventy-two cases. The exanthem *in Blichert's cases* was very pronounced; in one case *after it had subsided* it reappeared in full intensity after a week's interval without more of the drug having been taken in the interim. The *eruption* occurred in three of the four cases of pronounced *toxic action*. The dosage was 0.2 or 0.3 gm. three *or* two times a day, or 0.1 gm. in the morning and 0.2 gm. in the evening. In some of the cases veronal had been given at the same time or alternating with the luminal, but in two of the cases with most pronounced toxic action the luminal alone had been given.